The Ohio State University

Mission and Vision Statement
The Ohio State University has as its mission the attainment of international distinction in education, scholarship, and public service. As the state’s leading comprehensive teaching and research university, Ohio State combines a responsibility for the advancement and dissemination of knowledge with a land-grant heritage of public service. It offers an extensive range of academic programs in the liberal arts, the sciences and the professions.

Ohio State provides accessible, high-quality undergraduate and graduate education for qualified students who are able to benefit from a scholarly environment in which research inspires and informs teaching.

At Ohio State, we celebrate and learn from our diversity and we value individual differences. Academic freedom is defended within an environment of civility, tolerance, and mutual respect.

Equality of opportunity is a basic philosophy of Ohio State. Mindful of the need for all persons to adapt to the changing roles and needs of society, the university also provides evening programs and continuing education opportunities to serve a wide spectrum of lifelong learning needs. In the exploration of new ideas and in the preparation of citizens for their roles in a changing society, the university represents a human commitment—an expression of the aspiration of people to better themselves and the world in which they live.

Campuses
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The Ohio State University Bulletin

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1. Freshman Application Bulletin
2. Graduate School
3. Course Offerings
4. College of Food, Agricultural, and Environmental Sciences
5. Colleges of the Arts and Sciences
6. College of Business
7. College of Dentistry
8. College of Education
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13. College of Nursing
14. College of Optometry
15. College of Pharmacy
16. College of Social Work
17. College of Veterinary Medicine
18. Agricultural Technical Institute
19. Office of Continuing Education
20. General Information
21. Transfer Application Bulletin

Admission application forms are available from the Admissions Office, The Ohio State University, Third Floor Lincoln Tower, 1800 Cannon Drive, Columbus, Ohio 43210-1230; 614-292-3980.

This publication is available in alternative formats upon request. Please contact the Bulletin Office at (614) 292-3980 for individual bulletins, for bulk orders call (614) 292-8822.

At The Ohio State University, every effort is made to provide accurate and up-to-date information. However, the University reserves the right to change without notice statements in The Ohio State University Bulletin series concerning rules, policies, fees, curricula, courses, or other matters when necessary.

In addition, Ohio State is currently reviewing and restructuring many of our academic programs in an effort to enhance their quality and improve our efficiency. In that process, some of the programs and courses mentioned in this bulletin may be modified, consolidated with other programs or courses, or eliminated. If you have questions about a particular program or course, you should contact the appropriate university college or department. You may be referred to any university departments by contacting the Admissions Office at 614/292-3980.

The language incorporated throughout this bulletin is intended to be inclusive and free of gender specific connotation. In those instances where gender specifically remains, unless specifically noted, it is to be considered as including both the masculine and the feminine genders.

Editor--Lisa Grooms, Office of the University Registrar
Photographs--Courtesy of University Communications
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(Donald Roberts and James Zimmer, Supervisors)
Student Responsibility

Students are responsible for knowing their own standing scholastically in reference to the published regulations and standards of the University and of their college or school.

Examinations and Marks

Curricular Requirements (Rule 3335-7-06)

Every undergraduate curriculum must provide for a minimum of fifteen hours of free electives.

Basic Education (Rule 3335-7-07)

Every undergraduate student must complete forty-five hours selected to ensure acquaintance with the three basic areas of academic study: the humanities, the social sciences, and the natural sciences. A minimum of fifteen hours is required in each of the three areas.

Course Examinations (Rule 3335-7-19)

At the close of each course as defined in rule 3335-7-01 of the Administrative Code, an examination will be given on the student's capabilities relative to the stated course objectives, the method of examining to be determined by the instructor or supervisor of the course. Examinations in laboratory and seminar courses shall be optional with the instructor concerned. Examinations for graduating students shall be given at a time near the end of each course, preferably during the last week of classes.

Schedules for Final Examinations (Rule 3335-7-20)

Examinations for classes taught on the regional campuses and for classes whose enrollment is exclusively of students registered in the Colleges of Dentistry, Law, Medicine, Optometry, Pharmacy, and Veterinary Medicine will be scheduled by the offices of the regional campuses and of the colleges respectively. All examination schedules prepared outside the Office of the University Registrar shall, before publication, be cleared with the Office of the University Registrar which shall have the power to resolve all conflicts.

Examinations for graduating students shall be arranged by individual instructors so that final grades for the affected students may be submitted to the Office of the University Registrar by the deadlines established by that office.

All other final examinations shall be centrally scheduled by the Office of the University Registrar. The official examination schedules shall be strictly adhered to by all instructors. Any deviation must first be approved by the appropriate university official (department chairperson, regional campus dean and director, or college dean) in consultation with the Office of the University Registrar, which shall have the power to resolve all conflicts.

In performing its scheduling function the Office of the University Registrar shall limit individual examinations to two-hour duration and the total examination period to no more than five days.

Marks (Rule 3335-7-21)

The official marks of the University are A, A-, B+, B, B-, C+, C, C-, D+, D, E, EM, I, K, P, PA, NP, R, S, U, and W. The marks shall have the following meanings:

\[ A, A- \] The instructor judged the student to have satisfied the stated objectives of the course in an excellent manner. The student's performance was judged to be in this range of high quality based upon a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

\[ B+, B, B- \] The instructor judged the student to have satisfied the stated objectives of the course in an above-average manner. The student's performance was judged to be in this range of above-average quality based upon
a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

C-, C, C+

The instructor judged the student to have satisfied the stated objectives of the course in an average manner. The student's performance was judged to be in this range of average quality based upon a comparison with other students in the course, and/or students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

D+, D

The instructor judged the student to have satisfied the stated objectives of the course in a low but acceptable manner. The student's performance was judged to be in this range of below average but acceptable quality based upon a comparison with other students in the course, and/or with students who have taken the course previously, and/or the instructor's personal expectations relative to the stated objectives of the course, based on the instructor's experience and expertise.

E

The instructor judged the student not to have satisfied the stated objectives of the course. Credit for a course in which the mark E has been received can be obtained only by repeating and passing the course in class. (See rules 3335-7-23 to 3335-7-28 of the Administrative Code.)

EM Examination

This mark indicates credit given to students registered in the University on the basis of examinations taken prior to or after admission to the University. The level of achievement which must be demonstrated by the student on these examinations in order to receive EM credit shall be determined by the department or school in which the course is offered for credit, in accord with the criteria for the award of letter grades. This credit, up to a maximum of 45 credit hours, shall be assigned only upon the authorization of the chairperson of the department or the director of the school and with the approval of the authorized representative of the dean or director of the student's enrollment unit. Additional examination credit hours may be assigned specific curricular programs with the prior approval of the Council on Academic Affairs. Examination credit shall not be given to a student for a course in which the student has received a mark at this University or for which the student has transfer credit from some other college or university. Conversely, no course for which EM credit has been received can be taken later for a grade or credit. No credit points are allowed for courses in which a mark of EM is given.

I

Incomplete

An I indicates that the student has completed a major portion of the work in the course in a satisfactory manner, but for reasons judged by the instructor to be legitimate, a portion of the course requirements remains to be completed.

The mark I shall be reported to the Office of the University Registrar together with the mark which the University Registrar is authorized to enter on the student's official record unless a different mark is reported to the Office of the University Registrar in the manner and within the time described below.

The student must complete the work so that the instructor of the course may report the final mark at the earliest possible time, but not later than noon of the sixth Saturday of the quarter, semester, or session following that in which the I was received. For legitimate reason, the instructor may establish a deadline for the completion of the work which is within the maximum time permitted. Upon petition of the student within this period, the authorized representative of the dean or director of the enrollment unit in which the student was last enrolled after consultation with the instructor of the course, or, if the instructor is unavailable, the chairperson of the department involved, may for good reason allow a student additional time in which to complete the work. Generally, this shall not be longer than the end of the quarter, semester, or session following that in which the I was received. Any decision extending the period shall set forth the time in which the student shall complete the work and a copy of the decision shall be forwarded to the Office of the University Registrar.

As soon as the incomplete work has been made up, the instructor, or in the case of the instructor's absence from the University, the department chairperson or the director of the school, shall file the proper mark in the Office of the University Registrar. Until such time as a final mark is recorded the credit for the mark I shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

In no case shall a student who has received the mark I be permitted to repeat the course in which such mark was received until such time as the I has been removed and then only in such cases as fall within Rule 3335-7-28 of the Administrative Code.

K

Credit

This mark shall be used for work credited from other institutions by the director of admissions only. K credit shall be counted as hours only and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code (page 6).

P

Progress

This mark is used to indicate that the student has shown satisfactory progress in a series or sequence of courses where the mark is not recorded until the final quarter, semester, or session of the series or sequence is completed. Until such time as a final mark is recorded the credit may be given and the credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code (page 7). When a final mark is submitted by the instructor, all previous P marks shall assume and be recorded with the value of the final mark. P mark is not to be used for any course approved for the S, U grading option.

PA-pass, NP-non-pass

The grade pass PA means the student has satisfied the stated objectives of the course, and the grade non-pass NP is the equivalent of the grade E.

These marks may be used at the option of undergraduate or continuing education students only, subject to the following conditions:

This grading pattern may be chosen for a maximum of thirty credit hours, provided the student has an accumulated point-hour ratio of 2.00 or higher.

Among these thirty credit hours, an undergraduate student may elect this option for courses in fulfillment of the curricular requirements of Rule 3335-7-06 of the Administrative Code.

An undergraduate student may elect this option for courses that are not required or designated as required electives in the curriculum leading to the degree for which the student is a candidate.

Hours graded pass PA count toward the minimal number of hours required for a degree. Pass or non-pass marks (PA, NP) are not computed in the point-hour average of the student.

Before five p.m., of the third Friday of a quarter or the second Friday of a term, a student must have declared intention to take a course on this basis by filling the appropriate form with the dean or director of the student's enrollment unit. A student may not change to or from this option after five p.m. of the third Friday of a quarter or the second Friday of a term.

R

Registered to Audit

This mark indicates that the student has registered to audit the course and has met the conditions established for audit enrollment in the course. No credit hours shall be awarded for this mark (See rules 3335-7-29 and 3335-7-33 of the Administrative Code).

Before five p.m. of the third Friday of a quarter, semester, or session, or the second Friday of a term, a student must have declared intention to take a course for audit or to change from
a credit to an audit basis by filing the appropriate form with the dean or director of the student's enrollment unit. A student may not change to or from the audit option after five p.m. of the third Friday of a quarter, semester, or session, or the second Friday of a term.

S-Satisfactory, U-Unsatisfactory

The mark S may be used to record either satisfactory progress or completion of work, provided that the course has been approved for this mark by the dean of the college offering the course, and in the case of courses carrying graduate credit, by the dean of the Graduate School. It shall be used as an alternative to U or I in all individual studies courses whatever their number. S credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

The mark U shall be used for unsatisfactory work in courses in which a student would be entitled to the mark of S if the student's work had been satisfactory. No credit shall be given for work marked U. This mark shall not be considered in determining a student's point-hour ratio under Rule 3335-7-26 of the Administrative Code.

W Withdrew

This mark is used for students withdrawing from one or more courses or from the University. See Rule 3335-7-32 of the Administrative Code for procedures and provisions governing withdrawals.

Report of Marks (Rule 3335-7-22)

Upon completion of the course requirements, marks for every student shall be reported to the Office of the University Registrar in accord with deadlines listed in the quarterly Master Schedule of Classes.

This office maintains the student's official permanent record and is responsible for issuing a quarterly grade report to each student.

Alteration of Marks (Rule 3335-7-23)

A mark filed in the Office of the University Registrar is a part of the official records of the University. It is subject to change only when a procedural error has been discovered in evaluation or recording of a grade. Action to change a grade must be initiated before the end of the second succeeding quarter. In no case will a grade be revised in accordance with criteria other than those applied to all students in the class. If the instructor agrees that an error in the mark was made, the mark will be changed upon written authorization of: the instructor of the course; the instructor's department chairperson; the director of the instructor's school, if applicable; the dean of the instructor's college; and the authorized representative of the dean or director of the student's enrollment unit.

If a student believes that a procedural error in grading was made, the student should meet with the instructor. If the instructor does not agree that a procedural error was made, the student may meet with the department chairperson to discuss the grade grievance. The chairperson shall respond to the student no later than 30 days after the student has requested a review by the chairperson. Upon receipt of the chairperson's response, if the issue is not resolved to the satisfaction of the student, the student may within two weeks request in writing by duplicate submission to the dean or director of the instruction unit and the department chairperson the procedures in paragraph (B) of this rule. Unresolved cases of grade grievance due to grading procedures are subject to paragraph (B) of this rule; unresolved cases of grade grievance due to other causes are not subject to paragraph (B) of this rule.

(B) Unresolved cases of grade grievances due to grading procedures shall be reviewed by a faculty departmental committee appointed by the department chairperson.

• In cases of instructors still affiliated with the University, the review committee shall consult both the student and the instructor and shall determine the validity of the grade grievance due to grading procedures. The review committees shall make its findings known in writing to both the student and the instructor within 30 days of the student's request to the chairperson. If the committee finds that a procedural error has occurred and if the instructor declines to accept the findings of the review committee, the committee shall consider the reasons for not authorizing a grade change given by the instructor and may, upon consideration of these reasons, authorize in writing a grade change to be instituted by the department chairperson.

• In cases of instructors no longer affiliated with the University, the findings of the committee shall be reported to both the student and the instructor. If the instructor chooses not to respond, the judgment of the committee shall prevail. If the instructor responds and declines to accept the findings of the committee that a procedural error has occurred, the committee shall consider the reasons for not authorizing a change given by the instructor. In either case, the committee may, upon due consideration, authorize in writing a grade change (if such can be determined) to be instituted by the department chairperson.

If a department committee can find no academic basis upon which to recommend an appropriate grade for the course, the student shall be given the option of having the course stricken from the student's record and, if so desired, to retake that course without prejudice or penalty.

(C) If charges of grave academic misconduct against an instructor are made and substantiated under Rule 3335-5-04 of the Administrative Code, the department chairperson shall be authorized to appoint a department grade grievance committee to consider grading errors that are alleged to be related to the misconduct. The committee shall consider all evidence and present, in writing, a report to the chairperson indicating any recommended grade changes. The department chairperson shall be authorized to institute grade changes in accordance with the recommendations of the committee.

If a department committee can find no academic basis upon which to recommend an appropriate grade for the course, the student shall be given the option of having the course stricken from the student's record and, if so desired, to retake that course without prejudice or penalty.

The Graduate School and graduate professional colleges may formulate appropriate modifications of this rule, subject to the approval of the Council on Academic Affairs, and publish this rule in their bulletins.

Course Credit

Credit Hours (Rule 3335-7-24)

(A) All courses shall be assigned a number of credit hours in accordance with the procedure outlined in rules 3335-7-02 to 3335-7-04 of the Administrative Code. This may be any number from zero on up; however, in determining the credit hours assigned, the department, school, college, and Council on Academic Affairs should use as a guide the following suggested standards:

1) One credit hour shall be assigned for each three hours per week of the average student's time, including class hours, required to earn the average grade of C in this course.

2) One credit hour shall be assigned for each two consecutive hours of practical or experimental work per week in any department or school.

3) One credit hour shall be assigned for each three hours of laboratory work per week, when no additional outside work is required. When outside work is required, then the standard in paragraph (A) (1) of this rule shall be applied.

(B) In determining the hours per week required by the course or work, the Council on Academic Affairs may, in appropriate cases, consider the average weekly hours spent during a quarter, semester, or session on the course or work. It should be remembered that the above are guides only and may be deviated from for good cause.
(C) When comparing or combining semester credit hours with quarter credit hours, one semester credit hour shall be the equivalent of one and one-half quarter credit hour.

**Credit Points and Point-hour Ratio**
**(Synopsis of Rules 3335-7-25 and 3335-7-26)**

A student's academic standing for a quarter, semester, or session is expressed by the point-hour ratio. This ratio is found by dividing the total number of points earned by the total number of credit hours scheduled or undertaken. Courses in which the marks EM, I, K, NP, P, PA, R, S, U, or W are given are not included in the computations. Courses in which the marks A-, B+, B-, C+, C-, D+, D, or E are given are computed according to the scale: A=4.00, A=3.70, B+=3.30, B=3.00, B-=2.70, C+=2.30, C=2.00, C-=1.70, D+=1.30, D=1.00, and E=0.00. The following example shows how a point-hour ratio is determined.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course No. 1</td>
<td>5</td>
<td>20.0</td>
</tr>
<tr>
<td>Course No. 2</td>
<td>3</td>
<td>6.9</td>
</tr>
<tr>
<td>Course No. 3</td>
<td>(3)</td>
<td>1.0</td>
</tr>
<tr>
<td>Course No. 4</td>
<td>3</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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Point-hour ratio: 2.44

When the final grade on Course No. 3 is recorded, the points and hours will be included in the computation of the student's point-hour ratio. When a student has a record for two or more quarters, semesters, or sessions, the student will have a cumulative point-hour ratio determined by dividing the total points earned by the total hours undertaken.

The point-hour ratio begins anew when a student enrolls in Dentistry, Law, Medicine, Optometry, Pharmacy, Veterinary Medicine, or the Agricultural Technical Institute. When determining the point-hour ratio of a student:

- For a quarter, semester, or session if applicable, the applicable number of credit hours shall be the student's scheduled credit hours in that quarter, semester, or session.
- For the student's work in the University, the applicable number of credit hours shall be the total number of credit hours undertaken in the University except as modified by Rule 3335-7-27.
- For the student's work in the Graduate School, the applicable number of credit hours shall be the total number of graduate credit hours undertaken while enrolled in the Graduate School.
- For the student's work in a professional college or school or professional division of a college, the applicable number of credit hours shall be the total number of credit hours undertaken while enrolled in the professional college or school or professional division of a college.
- For the student's work in the major field of interest, the applicable number of credit hours shall be the total number of credit hours undertaken in courses approved for the major program.

No College of Medicine point-hour average shall be computed for a student enrolled in the College of Medicine in a curriculum leading to the degree, Doctor of Medicine, when that student has received only the marks of H, S, or E in the College of Medicine.

**Recalculation of Cumulative Point-hour Ratio (Fresh Start Rule)**
**(Rule 3335-7-261)**

An undergraduate student who re-enrolls in the University after an absence of five or more years may petition the dean or director of his enrollment unit to recalculate the cumulative point-hour ratio of his previous residency. If the petition is approved, all courses taken will remain on the permanent record. Those with marks of A, A-, B+, B-, C+, C-, EM, K, PA, or S, will be counted for credit only. No other marks will be counted for credit.

If the petition is approved, a student resumes his academic program with no cumulative point-hour ratio, and thereafter is subject to the conditions of warning, probation, and dismissal that govern all students (see Rules 3335-9-24 to 3335-9-28 of the Administrative Code).

Under the provisions of this rule a student, before graduation, must be re-enrolled for a minimum of 45 quarter credit hours and three academic quarters.

All courses ever taken at the University will be used in the calculation of the cumulative point-hour ratio required for the purposes of graduation with honors. The Graduate School and graduate professional colleges may formulate appropriate modifications of this rule, subject to the approval of the Council on Academic Affairs, and shall publish the rule in their bulletins.

**Failure in a Required Course (Rule 3335-7-27)**

An undergraduate or professional student who has not been dismissed from the University must repeat a regularly scheduled class, at the first opportunity, a required course in which a mark of E has been received, unless an equivalent course is recommended and approved by the authorized representative of the dean or director of the enrollment unit.

A graduate student who has not been dismissed from the University must repeat in a regularly scheduled class a required course in which a mark of E has been received only if this is required by the student's advisor.

**Freshman Forgiveness Rule (Rule 3335-7-271)**

(A) If a course in which an undergraduate student receives a grade of D+, D, or E, taken during the freshman year (the period during which the first forty-four credit hours are accumulated on the student's official permanent record) is repeated before the end of that student's sophomore year (when the student will have accumulated a total of eighty-nine credit hours), the original course credit and grade will be automatically excluded from the calculation of the student's cumulative point-hour ratio and deficiency points, but will remain on the student's official permanent record. This action will be subject to the following conditions:

1) If the grade in the original course was a D+ or D, a student may repeat the course for credit only upon the recommendation of the authorized representative of the dean, or director of the student's enrollment unit. Such recommendation must be obtained before noon of the third Saturday of the quarter in which the repeated course is taken.

2) The same course may be repeated only once under this rule.

3) This rule may be applied for a maximum of fifteen credit hours.

(B) The graduate school and graduate professional colleges may formulate appropriate modifications of paragraph (A) of this rule, subject to the approval of the council on academic affairs, and publish the rule in their bulletins.

**Repetition of Courses (Rule 3335-7-28)**

Except as specified by Rule 3335-7-27 of the Administrative Code, undergraduate students who have received a mark of E or NP in a course at this university may repeat the course for credit at their option.

Undergraduate or professional students, as defined in Rule 3335-9-01 of the Administrative Code, who have received a mark of D+ or D in a course at this university may repeat the course for credit only upon the recommendation of the authorized representative of the dean or director of their enrollment unit.

Undergraduate or professional students, as defined in Rule 3335-9-01 of the Administrative Code, who have received a mark of A, A-, B+, B-, C+, C-, or PA in a course at this university or elsewhere may repeat the course only as auditors, in accordance with Rule 3335-7-29 of the Administrative Code.
A graduate student, as defined in Rule 3335-9-01 of the Administrative Code, may repeat for credit any course when approval is given by the student's adviser.

A student who has audited a course may subsequently repeat the course for credit only upon receiving permission of the authorized representative of the dean or director of the student's enrollment unit.

The credit hours for a repeated course shall in no case be counted more than once in meeting graduation requirements. When a student repeats a course, both grades appear on the student's record and both are used in computing the point-hour ratio, except as modified by Rule 3335-7-271 of the Administrative Code.

**Admission to Courses as an Auditor (Rule 3335-7-29)**

An undergraduate or professional student may audit a course upon the approval of the professor in charge of the course and the dean of the college, or designee, in which the student is registered. (For repetition of courses, see Rule 3335-7-28 of the Administrative Code). A graduate student may audit a course upon the approval of the professor in charge of the course and the student's adviser.

**Withdrawal from Courses or from the University (Rule 3335-7-32)**

Withdrawal from the University during a quarter, semester, or session, constitutes withdrawal from all courses in which a student is enrolled during that quarter, semester, or session. Upon official notification of the student's withdrawal from the University, the University registrar is authorized to enter the dated notation withdraw on the student's official permanent record.

To withdraw from any or all courses, a student must file the appropriate form with the authorized representative of the dean or director of the student's enrollment unit.

Until 5:00 p.m. of the third Friday of a quarter, semester, or session or the second Friday of a summer term, a student may withdraw from any or all courses which began in the same quarter, semester, or session, and no record for the course(s) will be entered on the student's official permanent record.

After 5:00 p.m. of the third Friday of a quarter, semester, or session and until 5:00 p.m. of the seventh Friday of a quarter, semester, or session, if a student withdraws from any or all courses which began in the same quarter, semester, or session, the University registrar is authorized to enter the mark W on the student's official permanent record for the courses withdrawn.

After 5:00 p.m. of the seventh Friday of the quarter, semester, or session or the second Friday of a summer term, a student who, because of circumstance beyond his/her control, finds it necessary to withdraw from any or all courses, must file the appropriate petition with the authorized representative of the dean or director of the enrollment unit. Reasons not acceptable include (but are not limited to) the student's performance in the course(s), lack of preparation for the course(s), or dissatisfaction with the subject matter offered in the course(s). If the petition is approved, a copy will be filed with the University registrar who is then authorized to enter the mark W on the student's official permanent record and the instructor(s) of the course(s) will be so notified. If the petition is not approved, the student continues to be enrolled in the course(s) and a final mark must be submitted by the instructor(s). Withdrawal from any and all courses shall not be permitted after the last day of regularly scheduled classes except when the student experiences a genuine emergency after the regularly scheduled classes end and prior to sitting for the final examination in a given course or courses.

Withdrawal from any or all courses shall not be permitted after the final examination in that course has been given.

A student who stops attending a course (or courses) and does not officially withdraw from it (them) shall have the appropriate mark as submitted by the instructor entered on the student's official permanent record for the course(s). Such a mark shall be based on the grading criteria used to evaluate all students in the course.

Graduate professional colleges shall formulate rules to govern withdrawal of their students from courses in their respective curricula, subject to the approval of the Council on Academic Affairs, and publish these rules in their respective bulletins.

For provision regarding return of fees, when applicable, see Rule 3335-9-16 of the Administrative Code. This information may also be found in the Master Schedule of Classes Bulletin.

**Conditions and Procedures for Disenrollment from a Course (Rule 3335-7-33)**

Subject to final approval by the Ohio State University Board of Trustees.

(A) The instructor (or in the case of a graduate teaching associate, the supervising faculty member), the chairperson of the instructor's department (with the agreement of the instructor), or other appropriate administrative official may disenroll a student from a course if:

1) After the third instructional day of the quarter, semester, session, or term, the first Friday of the quarter, or the student's second scheduled class session of the course, whichever occurs first, the student fails to attend the scheduled course without giving prior notification to the instructor. Under this paragraph, no student may be disenrolled from a course until after the first course meeting following the student's registration. When the department elects to use this procedure, the instructor, the chairperson, or other appropriate administrative official shall notify the student's enrollment unit. The enrollment unit will notify the student and take appropriate action to remove the student from the course.

Since not all departments exercise the option to disenroll students in all courses, this rule does not relieve the student of the responsibility for dropping a course the student is not attending.

2) The student enrolls to audit a course without the instructor's approval, or fails to meet the prerequisites of the course. Disenrollment procedures shall be the same as in paragraph (A)(1) of this rule.

3) Before the third Friday of a quarter, semester, or session, or the second Friday of a summer term, and following completion of a placement examination, or another appropriate measure of preparation or ability, the student is judged to be registered in an inappropriate course. The department or school offering the course may then instruct the secretary of the college or school in which the student is enrolled to change the student's registration either to a more elementary or more advanced course.

4) Disenrollment is effective upon action of the instructor, department chairperson, or other appropriate administrative official.

5) Credit for all rescheduled courses resulting from action under paragraph (A)(3) of this rule shall count toward the fulfillment of graduation requirements unless the student has previously earned university or college credit in a course having substantially the same subject matter content or the substituted course is one which the department or school, with the approval of the Council on academic affairs, has established for students with inadequate preparation for college level courses of that department or school.

6) If a student who has enrolled to audit a course fails to complete the requirements for audit specified by the instructor and also fails to withdraw from the course, the instructor shall inform the Office of the University Registrar when marks are reported for the quarter, semester, or session. That office will then disenroll the student from the course, removing the course from the student's permanent record, and will notify the student and the student's college of the action taken.
Administrative hold

Administrative holds (Rule 3335-9-16)

With the approval of the vice president for student affairs, an administrative hold may be placed on the records or accounts of any person who fails to comply in a reasonable period of time with an obligation imposed under University rules or who has an overdue debt or fine. An administrative hold will cause certain services to be withheld, including, but not limited to: obtaining current quarter grades, registering or enrolling, being certified as eligible to obtain a degree or certificate, receiving a transcript, borrowing books or equipment, or participating in discount plans available to faculty, staff, or alumni.

The unit originating an administrative hold on the records or accounts of any person shall notify the person in writing of the obligation that is overdue by providing another itemized billing or list of actions requested, specifying when the administrative hold will become effective, and indicating the name and method of contacting an individual who can provide additional information. Any disputes concerning the legitimacy of a hold or its processing will be resolved by the University Registrar.

Improper Registration

Improper Admission or Registration (Rule 3335-9-20)

Admission or registration may be cancelled by the Director of Admissions or the University Registrar in cases of improper registration or when false or incomplete information is provided on the application for admission, registration forms, or other official documents. No credits earned subsequent to such cancellation and prior to proper admission or registration shall be entered upon the permanent record of the student. Students whose admission or registration is cancelled are not entitled to any refund of fees.

Absences

Absences (Rule 3335-9-21)

Each department or school may make its own rules relative to occasional absences by students from scheduled activities. If, however, a student is absent from a class to such an extent as to imperil his credit, or is notably irregular in attendance, it shall be the duty of the instructor concerned to report the facts promptly to the dean of the college in which the student is enrolled. The dean may take such action as he deems appropriate.

Warning and Dismissal

Minimum Scholastic Requirements (Synopsis of Rule 3335-9-23)

The academic standards controlling warning, probation, and dismissal of professional and graduate students shall be established by rule of the faculties of the college in which the professional student is registered, or of the Graduate School if the student is a graduate student; provided, however, that an undergraduate professional student shall not be dismissed from the University unless the student has 15 or more deficiency points which are computed on the basis of the entire undergraduate program.

A transfer student from another university who is admitted to advanced standing in this University shall have the point-hour ratio and deficiency points computed only upon work done at this University.

In order to remain in good academic standing in the University, an undergraduate student must maintain a cumulative point-hour ratio of at least 2.00. Deficiency points are applied only to the record of students whose point-hour ratio is below 2.00 and
are defined as the number of credit points students would have to earn to bring their point-hour ratio up to that level. Deficiency points may be calculated by subtracting the number of credit points earned from twice the total number of credit hours attempted for which calculable grades (A, A-, B+, B-, B, C+, C, C-, D+, D, or E) were given.

Academic Warning (Rule 3335-9-24)

Any student who has never attended another college or university and who seeks to enroll as a new freshman in this university shall be placed on special warning when his application for admission is received and processed if his academic credentials indicate the probability of low achievement. He shall be so informed before final registration and the payment of fees are completed, except as provided in Rule 3335-9-27 of the Administrative Code. The fact that special warning has been given shall be made known to the office of the college or school to which he seeks admission.

If, at the end of any quarter, a student subject to the provisions of Rule 3335-9-23 of the Administrative Code has accumulated fewer than 15 deficiency points, he shall receive a warning from the dean of his college or director of his school, except as provided in Rule 3335-9-27 of the Administrative Code.

Academic Probation (Rule 3335-9-25)

Any student who has accumulated 15 or more deficiency points shall be placed on probation. The probation shall continue provided the student's college considers the student's progress to be satisfactory and shall be removed when the deficiency points are fewer than 15. The student shall be notified of probationary status by the dean of the college or the director of the school in which the student is registered, except as provided in Rule 3335-9-27 of the Administrative Code. Such notification shall include a clear statement of what shall be considered to be satisfactory progress.

Probation by special action: If at any time the preparation, progress, or success of a student in an academic program is determined to be unsatisfactory, the college or school in which the student is registered shall be empowered to place the student on academic probation. An undergraduate student admitted with conditions and who has not satisfied the conditions after earning 30 quarter credit hours through regular course enrollment at this university shall be placed on academic probation.

Requirements and definition: In order to remain in good standing in the University a student must maintain a point-hour ratio (see Rule 3335-7-26 of the Administrative Code), of at least 2.00. Deficiency points are applied only to the records of students whose point-hour ratio is below 2.00 and are defined as the number of credit points a student would have to earn to bring the student's point-hour ratio up to that level. Deficiency points may be calculated by subtracting the number of credit points earned from twice the total number of credit hours attempted for which calculable grades (A, A-, B+, B-, B, C+, C, C-, D+, D, or E) were given.

Academic Dismissal (Rule 3335-9-26)

If the student's college or school considers a student's progress as unsatisfactory in meeting the conditions placed on his probation, the college or school shall be empowered to dismiss him from the University. An exception to this authority for undergraduate professional students shall be in accordance with paragraph (A) of Rule 3335-9-23 of the Administrative Code. Notice of the dismissal shall be sent to the student by the dean of the college or the director of the school in which the student was registered for the quarter, except as provided in Rule 3335-9-27 of the Administrative Code. No student shall be subject to academic dismissal unless he is currently on probation.

Notice of Dismissal (Rule 3335-9-27)

Notice of dismissal from the University shall be sent by the dean of the college in which the dismissed student is registered.

Reinstatement after Academic Dismissal (Rule 3335-9-28)

Any student who may be reinstated by a college or school following academic dismissal shall be subject to such special requirements as may be determined appropriate by the dean of the college or director of the school. If the performance record of any reinstated student does not meet the standards of probation specified at the time of reinstatement, then the college or school in which he is registered shall determine whether the student is to be dismissed or continued on probation.

Conditional/Unconditional Admission

For unconditional admission as an undergraduate student, applicants who graduate from high school on or after April 1, 1984, and transfer students with less than 45 transferable hours are required to have at least 15 high school college preparatory units distributed as follows: English-four units; Mathematics-three units; Social Sciences-two units; Natural Sciences-two units; Foreign Language-two units; visual or Performing Arts-one unit; and one additional unit from any of the above-mentioned subject areas. At the time students are notified of admission, they are also notified of any deficiencies. Academic advisors are available to help plan course work to remove conditions and answer any questions.

Admission conditions are satisfied by earning college credits in the subject areas of deficiency. Such credits may be earned by satisfactory completion of courses at Ohio State, by satisfactory completion of equivalent course work at other colleges, or by examination for credit. Admission conditions must be satisfied within the first 30 credit hours earned at Ohio State. Credit hours used to remove admission conditions are not counted toward the minimum number of credit hours required for graduation.

Ohio State courses which may be used to fulfill admission conditions in the foreign languages, the natural sciences, the social sciences, and the visual and performing arts are indicated in the following lists. For specific course descriptions, please see the course offerings listing in this book.

Foreign Languages

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

Completion of 102 or equivalent or placement into 103 is required to fulfill foreign language conditions. Not all of the following languages are offered each quarter.

- Arabic
- Bulgarian
- Chinese
- Czech
- French
- German
- Greek
- Hausa
- Hebrew
- Hungarian
- Italian
- Japanese
- Korean
- Latin
- Modern Greek
- Persian
- Polish
- Portuguese
- Romanian
- Russian
- Serbo-Croatian
- Shona

Natural Sciences

In addition to the courses listed below, any course approved for meeting the natural sciences component of the Basic Education Requirements or the General Education Requirements may be used to fulfill admission conditions.

- Agronomy 200, 240
- Anthropology 200
Astronomy 150, 155, 161, 162, 291, 292
Biochemistry 105, 211
Biology 101, 102, 113, 114, H115, H116
Chemistry 101, 102, 121, 122, H201, H202
Entomology 100, 200, 361
Geography 220
Geological Sciences 100, 110, 121, 122, 203, 204, 206, 210
Microbiology 301, 509
Molecular Genetics 140, 201
Natural Resources 100
Pharmacy 200
Physiology 100.01, 100.02, 103, 104, 111, 112, 131, 132
Plant Biology 101, 102, 201, 202, 210, 313
Zoology 201, 220, 232, 235, 313

**Social Sciences**

In addition to the courses listed below, any course approved for meeting the social sciences component of the Basic Education Requirements or the General Education Curriculum may be used to fulfill admission conditions.

Agricultural Economics 110, 200, H200
Anthropology 201, 202
Black Studies 130.01, 181, 222, 248, 261, 282
Business Administration: Management and Human Resources 211
Communication 140
Economics 100, 200, 206
Family Resource Management 280
Geography 200, 240
Journalism 101
Landscape Architecture 201
Political Science 101, 165, 201, 202, 210
Psychology 100, 101, 210, 230
Recreation Education 200
Rural Sociology 105, 110
Sociology 101, 202, 209, 210
Textiles and Clothing 272

**Visual and Performing Arts**

Architecture 200, 201, 202
Art 170, 172, 182, 190, 231, 240, 242, 278, 290
Art, College of the 160
Black Studies 180, 244, 271, 272
Chinese 283
Communication 105, 110
Dance 200
Engineering Graphics 110, 121, 122, 141, 142, 166, 167
History of Art 111, 210, 211, 212, 210
Industrial Design 160
Landscape Architecture 200, 202, 203, 204, 271
Music 101.01, 101.02, 102.01, 102.02, 121, 141, 180, 181, 182, 183, 184, 186, 186.01, 186.02, 188.02, 188.03, 188.04, 191, 195, 196.01, 196.02, 196.03, 196.04, 197, 199.01, 199.02, 199.03, 199.04, 199.05, 199.06, 199.07, 199.10, 199.11, 244
Photography and Cinema 201, 220
Physical Education 153.01, 153.02, 153.03, 154.04, 153.05, 153.06, 153.07, 163.01, 163.02, 163.04, 163.05, 163.06, 181.01
Speech and Hearing Science 135
Textiles and Clothing 270
Theatre 100, 205, 210, 220, 221, 222, 271, 280

Curricular information

At the time of printing of this Bulletin, the University is in the process of implementing a new General Education Curriculum. Course numbers, credit hour values, and course content listed in this Bulletin are subject to change. For more specific information, please direct inquiries to the appropriate college office.

**College or School Requirements**

Each college or school has certain requirements which must be met by every student seeking to earn a degree in that college or school. The specific course requirements for the curricula administered by a given college or school can be found in the bulletin for that college or school. In addition to these, the University has established certain requirements outlined below.

**University Required Courses**

**General Education Curriculum Requirements (GEC)**

In addition to any college or school requirements, every undergraduate student must complete a body of course work that assures a broad acquaintance with the basic areas of academic study. Courses which may be used to meet the GEC are so designated throughout this bulletin. Not all GEC courses are acceptable in all curricula. Students should consult their specific college or school publications or their advisors before scheduling courses to be applied to this requirement.

The objectives of this part of the curriculum, as set forth by the University faculty, are as follows:

There are certain capacities and understandings, certain qualities, abilities, and characteristics which are part of what we understand as the liberating process a university is particularly suited to develop, nourish, and hone. Primary among these capacities is the ability to write and speak with clarity and precision; to read and listen critically and with comprehension. Of the same order is the ability to engage in careful logical thinking and critical analysis, including the abilities that permit intelligent responses to problems and arguments which involve quantitative data.

An understanding of and appreciation for the important modes of human thought and inquiry are crucial characteristics of a University education. An understanding of the methods of modern science and social science, the effect of science and technology on the natural and social environment, and the nature of mathematical knowledge constitutes part of this knowledge. The development of a refined historical, artistic, and literary consciousness is a further part. A university education should also develop and sharpen the capacity and confidence to make informed and discriminating ethical and aesthetic judgments.

We believe that an education in a university in our own nation today should foster an understanding of American institutions and the pluralistic nature of American society. It should also promote an understanding of the global interdependence of the modern world and should ensure facility with at least one other language other than English. Finally, we think that an American university should seek to develop a deep appreciation for the cultural traditions that have formed and reformed our nation and to develop a sense of the place of other cultures in world history.

**University Class Ranking System**

Student rank in all the undergraduate colleges is based on total credit hours completed and recorded.

<table>
<thead>
<tr>
<th>Class Standing</th>
<th>Credit Hours Earned</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>0 through 44</td>
<td>1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>45 through 89</td>
<td>2</td>
</tr>
<tr>
<td>Junior</td>
<td>90 through 134</td>
<td>3</td>
</tr>
<tr>
<td>Senior</td>
<td>135 and up</td>
<td>4</td>
</tr>
</tbody>
</table>

Rank begins anew when the student enrolls in Dentistry, Law, Medicine, Optometry, Pharmacy, Veterinary Medicine, or the Agricultural Technical Institute.
Students enrolled in the Graduate School receive the rank of either M-Master’s (0-50 earned hours) or Ph.D. (51 or more earned hours or master’s degree).

Should there be any doubt concerning the correctness of one’s rank, the student should consult with the appropriate enrollment unit.

**Retroactive Graduate Credit**

Students registered in an undergraduate college, in Continuing Education, or in a professional college cannot receive graduate credit for courses taken when the student is not enrolled in the Graduate School.

**Graduate Credit for Undergraduates**

An undergraduate may petition to take certain courses for graduate credit provided that:

- the student is a senior;
- the credit for the course is not used to meet baccalaureate degree requirements;
- the student’s cumulative point-hour ratio is 3.00 or above;
- the student completes a Senior Petition form and secures permission by the end of the first day of classes from: the secretary of the student’s college or school, the instructor in charge of the course, and the Graduate School; and
- the course is offered for graduate credit.

These courses may not be counted toward a graduate degree until the student has been admitted to the Graduate School, and until the Graduate Studies Committee accepts them and notifies the Graduate School. The hours are counted in the student’s graduate earned and cumulative credit hours, and the grades are counted in the student’s graduate cumulative point-hour ratio. Not more than 15 graduate credit hours may be completed under the Senior Petition.

**Degrees and Certificates (Rule 3335-9-29)**

Degrees and certificates shall be awarded undergraduate and professional students by the Board of Trustees upon recommendation of the college or school faculties and the University Senate, transmitted to the Board by the President.

Degrees and certificates shall be awarded graduate students by the Board of Trustees upon recommendation of the Council on Research and Graduate Studies and the University Senate, transmitted to the Board by the President. (See Rule 3335-5-35 of the Administrative Code.)

**Requirements for the Associate of Arts Degree**

To obtain the Associate of Arts degree, undergraduate students who have attended, or are attending, the Lima, Mansfield, Marion, or Newark campuses must:

- Successfully complete at least 90 quarter credit hours of university credit.

These 90 hours of credit may include a maximum of 12 quarter hours of technical special credit. Remedial courses (English 060, 100-01, 100-02, and 100-03; Math 040, 050, 052, 053, 075, 076, 100, 102, and 104 and courses listed in the Course Offerings Bulletin) or not counting toward the baccalaureate degree) may not be applied.

Credit hours earned to satisfy graduation conditions are not counted toward the minimum 90 hours required.

Repeated courses shall be counted only once.

**Level III or R placement on the Ohio State Math Placement Exam or the completion of Math 075 or 076 or 102 or above (excluding Math 180) is required.**

- Successfully complete a core of 50 hours of requirements (with no overlap between areas) distributed as follows: English 110 or 111 (5), humanities (10-15), foreign language (0-10), social science (10-15), natural science (10-15), and analytical skills/mathematics (0-10).

Courses used to satisfy the humanities, social science, and natural science components must be chosen from the list of courses approved as University GEC requirements. Similarly, courses used to satisfy the analytical/mathematics skills component must be chosen from the list of courses approved for Category II of the Liberal Arts Requirements of the Colleges of the Arts and Sciences, plus Mathematics 105 and 106. If a student should decide to pursue a baccalaureate degree after obtaining the Associate of Arts degree, the student would be required to fulfill the GEC requirements of the degree-granting enrollment unit. In accordance with Faculty Rule 3335-7-21, the Pass/Non-Pass Option may not be used for any of the core courses.

- Maintain a cumulative point-hour ratio of at least 2.00 on all work attempted at Ohio State at the time of, or after the completion of, all other requirements.
- Complete 30 of the last 45 quarter credit hours through regular course enrollment at Ohio State.
- Complete 15 of the required 90 quarter credit hours on a regional campus.
- Complete a minimum of three quarter credit hours in regular course enrollment at Ohio State Summer Quarter 1980 or thereafter.
- Not have received a baccalaureate or a professional degree from an accredited institution.
- Have filed an application for the degree in accordance with rules and procedures prescribed by the Colleges of the Arts and Sciences. Application must be made within four years after the requirements have been completed, assuming no other degrees have been awarded in the interim.

**Requirements for an Undergraduate Baccalaureate Degree (Rule 3335-9-30)**

To obtain an undergraduate baccalaureate degree from this University, an undergraduate student must:

(A) Have earned a minimum of 45 quarter hours credit through regular course enrollment at this University.

(B) Have been enrolled in the college, the Colleges of the Arts and Sciences, or the school recommending that degree during the last quarter necessary to complete degree requirements.

The executive committee of the college, the Colleges of the Arts and Sciences, or the school recommending the degree may, on petition by the student, waive this requirement.

(C) Have satisfactorily completed the number of credit hours required for the curriculum being pursued. The minimum number of credit hours required in each curriculum shall include the credit hours required under Rules 3335-7-06 and 3335-7-07 of the Administrative Code. Credit hours required to satisfy admission conditions shall not be used to satisfy the requirements of Rules 3335-7-06 and 3335-7-07 of the Administrative Code. Credit hours are considered as "satisfactorily completed" only if the student has received, at this university the mark A, A-, B+, B-, C+, C, D+, D, EM, K, PA, or 0 in those hours (see Rule 3335-7-21 of the Administrative Code).

(D) Have earned credit points (see Rule 3335-7-25 of the Administrative Code) totaling at least twice the number of credit hours attempted at this university for which calculable grades (A, A-, B+, B-, C+, C, D+, D, or E) were given.

(E) Have satisfactorily met all additional college and curricular requirements for the degree involved.

(F) Have filed an application for the degree in accordance with the rules prescribed by the college or school.

(G) Except for paragraph (B) of this rule, waiver of any part of this rule in the case of individual students may be made only by the Council on Academic Affairs following prior approval by the appropriate executive committee. The senior vice president for academic affairs and provost shall transmit all affirmative actions of the Council of Academic Affairs under this paragraph to the...
Requirements for a Graduate Degree
(Rule 3335-9-31)
To obtain a graduate degree from this university, a graduate student must have met the minimum requirements established by the Council on Research and Graduate Studies and approved by the Board of Trustees, and have filed an application for the degree in accordance with rules prescribed by the Council on Research and Graduate Studies.

Requirements for a Professional Degree
(Rule 3335-9-32)
To obtain a professional degree from this university, a student must meet the minimum requirements established by the college or school recommending the degree. In establishing such minimum requirements, the college or school shall include or exceed the minimum requirements stipulated by the appropriate accrediting body. Such graduation requirements shall be subject to approval by the Council on Academic Affairs and shall be filed with the secretary of the Board of Trustees.

Waiver of minimum requirements may be made by the faculty of the college or school recommending the degree or by a committee approved by that faculty. Requests for such waiver may be initiated by student petition or by the dean or director. The Council on Academic Affairs shall be notified at least quarterly of each such action.

Requirements for Certificate of Study (Rule 3335-9-321)
A certificate of study may be awarded concurrent with or following the student's receipt of a baccalaureate degree. Award of such certificates shall attest to demonstrated competence in a coherent academic curriculum, program or area of study.

To obtain a certificate a student must:
- Have been or be enrolled in the University during the last quarter of work necessary to complete the certificate requirement.
- In addition, the student must meet any residency requirement established by the college, the Colleges of the Arts and Sciences, or the school recommending the certificate.
- Have earned through regular course enrollment a minimum of 45 quarter hours credit in an approved certificate program. No certificate program shall require enrollment in and credit for more than 90 quarter hours. At least one-third of all quarter hours credit earned in a certificate program shall be at the 500-level or above. No more than five credit hours in the certificate program may be counted toward the student's undergraduate major or minor.
- Have earned the mark of A, A-, B+, B-, C+, C, or C- for all courses counted toward the completion of the certificate requirements.
- Have attained an undergraduate cumulative grade point average of 2.00 (or a graduate cumulative grade point average of 3.00, as appropriate) in courses used to satisfy the certificate program requirements.
- Have satisfactorily met all additional college or school requirements for the certificate involved.
- Have filed an application for the certificate in accordance with rules prescribed by the college, Colleges of the Arts and Sciences, or school.

Waiver of any part of this rule in the case of individual students may be made only by the Council on Academic Affairs upon recommendation of the executive committee of the college, colleges, or school. The senior vice president for academic affairs and provost shall transmit all affirmative actions of the Council under this section to the secretary of the student's enrollment unit and to the University registrar for notation on the student's permanent record.

The colleges of Dentistry, Law, Medicine, Optometry, and Veterinary Medicine, and the Graduate School may establish requirements and conditions, rather than those above, for certificates of study. Such requirements must be approved by the Council on Academic Affairs.

Authority for approval of all certificate programs shall rest with the Council on Academic Affairs. Proposals for graduate certificates must also receive the approval of the Council on Research and Graduate Studies. The president of the University and the University Senate shall be regularly informed of Council actions in this regard.

Standards for Honors at Graduation
(Rule 3335-9-33)
Degrees cum laude, magna cum laude, and summa cum laude may be granted for exceptional achievement in the curriculum of each enrollment unit as judged by that unit in terms of its own standards providing that the number of students accorded these honors does not exceed 10 percent, and that the number of students accorded summa cum laude and magna cum laude does not exceed six percent, and the number of students accorded summa cum laude does not exceed three per cent, of the graduating classes of the enrollment unit and that eligibility for these honors be based on a minimum of 90 credit hours of course enrollment at this university.

Standards for graduation "with distinction in [special subject(s)]" and "with honors in [ ]" shall be as adopted by the Council on Academic Affairs.

Beyond these minimal requirements the enrollment units may establish additional stipulations for graduation cum laude, magna cum laude, and summa cum laude.

Institutional Transfer
The Ohio Board of Regents, following the directive of the Ohio General Assembly, developed a statewide policy to facilitate students' ability to transfer credits from one Ohio public college or university to another in order to avoid duplication of course requirements. Since independent colleges and universities in Ohio may or may not be participating in the transfer policy, students interested in transferring to independent institutions are encouraged to check with the college or university of their choice regarding transfer agreements.

Transfer Module
The Ohio Board of Regents' Transfer and Articulation Policy established the Transfer Module, which is a specific subset or entire set of a college or university's general education program. Transfer Module consists of 54 to 62 quarter hours (or 36 to 40 semester hours) of courses in the following areas: English, Mathematics, Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences, and Interdisciplinary Study.

A Transfer Module completed at one college or university will automatically meet the requirements of the Transfer Module at another college or university once the student is admitted. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. For example, a student who completes the Transfer Module at Institution S (sending institution) and then transfers to institution R (receiving institution) is said to have completed the Transfer Module portion of Institution R's general education program. Institution R, however, may require additional general education courses beyond the Transfer Module.

Since many degree programs require specific courses that may be taken as a part of the general education or Transfer Module program at an institution, students are encouraged to meet with an academic advisor at the institution to which they plan to transfer early in their academic career. For example, students who will be majoring in any of the majors in the College of Business and Administration at the receiving institution should
take Economics 201, 202, and 203 (or equivalent course at another institution) rather than the Economics 200 course listed as a part of the Transfer Module. Because of specific major requirements such as these, early identification of a student's intended major is encouraged. Advisors at the institution to which a student wishes to transfer should be consulted regarding Transfer Module and general education courses and any specific program requirements that can be completed before transfer.

Conditions for Transfer Admission

1. The policy encourages receiving institutions to give preferential consideration for admission to students who complete the Associate of Arts or the Associate of Science degrees with a cumulative grade point of 2.0 or better for all previous college level courses.

2. The policy encourages receiving institutions to give preferential treatment to students who have not earned an Associate of Arts or Associate of Science degree but have earned 60 semester hours or 90 quarter hours with a cumulative grade point of 2.0 or better for all previous college level courses.

3. The policy further encourages that students who have not earned an Associate of Arts or Associate of Science degree or who have not earned 60 semester hours or 90 quarter hours with a cumulative grade point of 2.0 or better for all previous college level courses are eligible for admission as transfer students on a competitive basis.

Acceptance of Transfer Credit

1. Students who have completed the Associate of Arts or Associate of Science degree with a cumulative grade point of 2.0 or better will receive transfer credit for all college level courses in which a grade of D or better has been earned.

2. Students who have not earned an Associate of Arts or Associate of Science degree will receive transfer credit for all college level courses in which a grade of C or better has been earned.

Admission to a given institution, however, does not guarantee that a transfer student will be automatically admitted to all majors, minors, or fields of concentration at that institution. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as all other students. Furthermore, transfer students shall be accorded the same class standing and other privileges as all other students on the basis of the number of credits earned. All residency requirements must be successfully completed at the receiving institution prior to the granting of a degree.

Responsibilities of Students

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course requirements that can be met during the freshman or sophomore years. This will enable students to plan and pursue a course of study that will articulate with the receiving institution's major. Students are encouraged to seek further information regarding transfer from both their advisor and the college or university to which they plan to transfer.

Appeals Process

A student disagreeing with the application of transfer credit by the receiving institution shall be informed of the right to appeal the decision and the process for filing the appeal. Each institution shall make available to students the appeal process for that specific college or university.

If a transfer student's appeal is denied by the institution after all appeal levels within the institution have been exhausted, the institution shall advise the student in writing of the availability and process of appeal to the state level Articulation and Transfer Appeals Review Committee.

The Appeals Review Committee shall review and recommend to institutions the resolutions of individual cases of appeal from transfer students who have exhausted all local appeal mechanism concerning applicability of transfer credits at receiving institutions.

The O.S.U. Transfer Module

Instructions: The Transfer Module must include 54 quarter credit hours of introductory courses in the following areas: English composition, mathematics, arts/humanities, social and behavioral sciences, and natural and physical sciences. Students should follow these directions in selecting courses for the Transfer Module.

1. Select minimum area requirements from introductory courses marked with an asterisk (*) in each section.

2. Complete the required total minimum hours of the Transfer Module from the remaining courses on this list. NOTE: To assure the most efficient transfer of academic credit, be sure to check with an academic advisor to select the courses most appropriate for the general education requirements and/or the major at the transfer college or university selected.

ENGLISH COMPOSITION: (select a minimum of 5 quarter credit hours from the starred areas)

- English 110 (5) or 111 (5)
- One of the following (5 credit hours each):
  - Ag. Comm. 367; Art Edu. 367; Comm. 305, 316; Comp. SdIs, 367.02; Econ. 367.01-367.03; Engl. 367.01-367.06; Home. Ec. Edu. 367; Natl. Resour. 367; Physics 367; Theat. 367.01-367.02; Wom. SdIs 367

MATHEMATICS (select a minimum of 3 quarter credit hours from the starred areas)

- Mathematics 116
- Mathematics 130
- Mathematics 148
- Mathematics 150
- Computer and Information Science, any course at the 200 level or above offered by the Department of Computer and Information Science
- Philosophy 150, 250
- Statistics, any course offered by the Department of Statistics

ARTS/HUMANITIES (select a minimum of 9 quarter credit hours from the starred areas; select from at least two areas of study; at least one of the courses must be a literature (*) course)

- Arabic 241, 371*, 372*
- Art Education 367
- Arts, College of the 160, 161
- Black Studies 251*
- Chinese 232, 251*, 501*, 502, 503*, 504*
- Classics 101*, 102, 222*, 224, 225
- Communication 311
- Comparative Studies in the Humanities 101*, 102.01*, 102.02*, 103*, 104, 301*, 308*, 317
- Dance 200
- East Asian Languages and Literatures 131, 341
- German 291*, 292*, 299
Course Offerings

Course information (title, credit hours, level, description, etc.) starts on page 21. The most current information regarding new courses, changes to existing courses, credit hours, sections, days, times, buildings, room, and instructors may be found in the quarterly Master Schedule of Classes Bulletin.

Sample Course Listing

A 444t* Principles of Animal Nutrition  U 5
B A study of fundamental principles of nutrition in mammals and birds.

C Su (1st term), Au, Wi, Sp Qtrs. 4 cr, 1 2-hr lab. H444 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Chem 102 or 122 and Math 148 or equiv. Not open to students with credit for Animal Sc 444 or Ptry Sc 444. Open only to majors in animal nutrition. Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable. Cross-listed in Animal Science and Poultry Science. GEC course.

D 444.01 Principles of Animal Nutrition I
444.02 Principles of Animal Nutrition II

Explanation of a Course Listing

A 444t* Principles of Animal Nutrition  U 5

Course number: 444

A dagger (t) denotes that the course will not be offered this year. An asterisk (*) indicates that the course is offered every other year.

Course title: Principles of Animal Nutrition

Instructional Level: U
U = Undergraduate
UG = Advanced undergraduate and graduate
G = Graduate
P = Professional

Credit hours: 5

B A study of fundamental principles of nutrition in mammals and birds.

Course description: A study of fundamental principles of nutrition in mammals and birds.

C Su (1st term), Au, Wi, Sp Qtrs. 4 cr, 1 2-hr lab. H444 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Chem 102 or 122 and Math 148 or equiv. Not open to students with credit for Animal Sc 444 or Ptry Sc 444. Open only to majors in animal nutrition. Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable. Cross-listed in Animal Science and Poultry Science. GEC course.

Quarters of offering: Su (1st term), Au, Wi, Sp
Su = Summer
Au = Autumn
Wi = Winter
Sp = Spring
Classroom and laboratory hours: 4 cl, 1 2-hr lab.

Course credit is earned through satisfactory completion of course work which may involve classroom, laboratory, bio-learning center, computer-assisted instruction, or field trip attendance.

Honors statement: H444 (honors) may be available to students enrolled in an honors program or by permission of dept.

Prerequisite(s): Chem 102 or 122 and Math 148 or equiv.

The course number(s) or other information indicates the preparation or classification required to enroll in the course. If no department name is listed, the number(s) refers to the specific course within the same department. If a class standing (freshmen, sophomore, junior, senior) or rank (1st, 2nd, 3rd, 4th yr standing) is listed, only students with that or higher level are eligible for enrollment. Enrollment in a course requires the successful completion of all prerequisites or their equivalents. The department, school, or college office should be consulted in case of question's of eligibility to take a course.

Exclusion or limiting clause: Not open to students with credit for Anim Sc or P fury Sc 444. Open only to majors in animal nutrition.

Repeatability clause: Repeatable to a maximum of 10 cr hrs; subdivisions not repeatable.

Indicates the maximum number of hours a course may be repeated for credit.

General Information clause: Cross-listed in Animal Science and Poultry Science (meaning this same course is also listed in these two academic areas).

Gives general information about the course.

BER Courses: Courses which may be used to meet the University’s Basic Education Requirement (BER) are so designated throughout this bulletin. Not all BER courses are acceptable in all curricula. Students should consult their specific college or advisers before scheduling courses to be applied to this requirement.

GEC Courses: Courses which may be used to meet the University’s new General Education Curriculum (GEC) are so distinguished throughout this Bulletin. Students should consult their specific college or adviser before scheduling courses to be applied to this requirement.

FL, NS, SS, and VPA Admis Cond Courses: Courses which may be used to fulfill admission conditions are so designated throughout this bulletin. For additional information, see pages 12-13.

D

444.01 Principles of Animal Nutrition I
444.02 Principles of Animal Nutrition II

Decimal subdivisions:
444.01 Principles of Animal Nutrition I
444.02 Principles of Animal Nutrition II

The decimal numbers are subdivisions of the generic number (444). These subdivisions may also carry the information described in A, B, and C. When registering for a course with decimals, the desired subdivision must be used rather than the generic number.

University Classification and Course Numbering System (See Rule 3335-7-05)

Established 1967-68 (revised 1974-75), the system of numbering courses offered by the University is as follows:

000-099 Non-credit courses (except certain seminars and colloquia) for orientation, remedial, or other noncollege-level experiences. These are courses with credit added to graduation requirements.

100-199 Basic courses providing undergraduate credit, but not to be counted on a major or field of specialization in any department. Courses at this level are beginning courses, required or elective courses that may be prerequisite to other courses.

200-299 Basic courses providing undergraduate credit and may be counted on a major or field of specialization.

300-499 Intermediate courses providing undergraduate or basic professional credit that may be counted on a major or field of specialization.

500-599 Intermediate courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit only in other departments.

600-899 Courses providing undergraduate or professional credit that may be counted on a major or field of specialization, and may provide graduate credit (in all departments).

700-799 Advanced courses providing undergraduate, graduate, or professional credit.

800-899 Courses providing graduate credit and are open to undergraduates only with the consent of the dean of the Graduate School.

* Courses for which graduate credit is anticipated must be taught by a member of the faculty approved by the graduate committee of the department offering the course. 800 and 900-level courses must be taught by members of the graduate faculty.
Organization of Instructional Units (OU's)

College of Food, Agricultural, and Environmental Sciences
- Department of Agricultural, Environmental and Development Economics
- Department of Animal Sciences
- Department of Food, Agricultural and Biological Engineering
- Department of Food Science and Technology
- Department of Horticulture and Crop Science
- Department of Human and Community Resource
- Department of Plant Pathology

School of Natural Resources
Agricultural Technical Institute
- Cooperative Extension Service - State
- Cooperative Extension Service - Field

College of the Arts
- Department of Art
- Department of Art Education
- Department of Dance
- Department of History of Art
- Department of Industrial, Interior and Visual Communication Design
- Department of Theatre

School of Music

College of Biological Sciences
- Department of Biochemistry
- Department of Entomology
- Department of Microbiology
- Department of Molecular Genetics
- Department of Plant Biology
- Department of Evolution, Ecology, and Organismal Biology
- Division of Sensory Biophysics

College of Humanities
- Department of African-American and African Studies
- Department of East Asian Languages and Literatures
- Department of English
- Department of French and Italian
- Department of Germanic Languages and Literatures
- Department of Greek and Latin
- Department of History
- Department of Linguistics
- Department of Near Eastern Languages and Cultures
- Department of Philosophy
- Department of Slavic and East European Languages and Literatures
- Department of Spanish and Portuguese
- Department of Women's Studies
- Division of Comparative Studies in the Humanities

College of Business
- Department of Accounting and Management Information Systems
- Department of Finance
- Department of Management and Human Resources
- Department of Management Sciences
- Department of Marketing

College of Dentistry

College of Education
- School of Educational Policy and Leadership
- School of Physical Activity and Educational Services
- School of Teaching and Learning

College of Engineering
- Department of Aerospace Engineering, Applied Mechanics and Aviation
- Department of Chemical Engineering
- Department of Civil and Environmental Engineering and Geodetic Science
- Department of Computer and Information Science
- Department of Electrical Engineering
- Department of Industrial, Welding and Systems Engineering
- Department of Materials Science and Engineering
- Department of Mechanical Engineering

School of Architecture

Graduate School

College of Mathematical and Physical Sciences
- Department of Astronomy
- Department of Chemistry
- Department of Geological Sciences
- Department of Mathematics
- Department of Physics
- Department of Statistics

College of Social and Behavioral Sciences
- Department of Anthropology
- Department of Economics
- Department of Geography
- Department of Political Science
- Department of Psychology
- Department of Sociology
- Department of Speech and Hearing Science

School of Journalism and Communication
School of Public Policy and Management
College of Human Ecology
Department of Human Development and Family Science
Department of Human Nutrition and Food Management
Department of Consumer and Textile Sciences

College of Law

College of Medicine and Public Health
Department of Anesthesiology
Department of Cell Biology, Neurobiology, and Anatomy
Department of Emergency Medicine
Department of Family Medicine
Department of Internal Medicine
Department of Medical Biochemistry
Department of Medical Microbiology and Immunology
Department of Neurology
Department of Obstetrics and Gynecology
Department of Ophthalmology
Department of Otolaryngology
Department of Pathology
Department of Pediatrics
Department of Pharmacology
Department of Physical Medicine and Rehabilitation
Department of Physiology
Department of Psychiatry
Department of Radiology
Department of Surgery
School of Allied Medical Professions
School of Public Health

College of Nursing
Department of Community, Parent-Child, and Psychiatric Nursing
Department of Adult Health and Illness Nursing

College of Optometry

College of Pharmacy

College of Social Work

College of Veterinary Medicine
Department of Veterinary Biosciences
Department of Veterinary Clinical Sciences
Department of Veterinary Preventive Medicine

University Libraries
Accounting and Management Information Systems

400 Fisher Hall, 2:100 Neil Avenue, 222-9368

201 Outline of Accounting U 5
Introduction to accounting in modern business; topics include financial statement development, interpretation, and analysis in various decision-making contexts.
Su, Au, Sp Qtr's. 2-1/2 hr. Cl. Not open to students with credit for 211 or equiv. Intended for students whose major is in fields other than business.

211 Introduction to Accounting U 5
Preparation and use of accounting reports for business entities; focus on uses of accounting for external reporting, emphasizing accounting as a provider of financial information.
Su, Au, Wi, Sp Qtrs. 2-1/2 hr. H211 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq or concr: Econ 200 or equiv. Not open to students with credit for 201 or equiv. This course is available for EM credit.

212 Introduction to Accounting U 5
The uses of accounting reports in management decisions and in control of business operations; focus is on the internal use of accounting information.
Su, Au, Wi, Sp Qtrs. 2-1/2 hr. H212 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 211 or equiv. and Econ 200 or equiv. Not open to students with credit for 201 or equiv. This course is available for EM credit.

493 Individual Studies U 1-10
Individual study projects in selected areas in accounting and management information systems.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

494 Group Studies U 1-10
Group study projects in selected areas in accounting and management information systems.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

501 Accounting and Cost Analysis U G 3
An introduction to financial statement analysis and cost analysis for planning, decision-making, and control.
Wi, Sp Qtrs. 2 1/2-2 hr. Prereq: Ind Eng 500 and 504 or permission of instructor.

H519 Honors Managerial Accounting U 5
Cost measurement and estimation in the context of product costing systems; performance evaluation systems, managerial decision problems, and the special problems of nonprofit entities.
Sp Qtr. 5 cl. Prereq: H212 or permission of instructor.

H520 Honors Financial Accounting U 5
Principles and procedures of accounting for the assets, liabilities, and shareholder equity of an incorporated business.
Au Qtr. 5 cl. Prereq: H519. Not open to students with credit for 521, 522, or 523.

521 Financial Accounting I U G 3
Introduction to financial accounting theory and practice; determination of asset and liability valuation and income measurement and its relation to market frictions.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 212 and Bus-Mgt 300 and 201; or permission of instructor.

522 Financial Accounting II U G 3
Application of accounting techniques and theory to recording and reporting of financial data; emphasis on collection, summarization, and reporting of data in accordance with generally accepted accounting principles.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 521.

523 Financial Accounting III U G 3
Application of accounting theory in complex situations; emphasis on cash flows, leases, error corrections and shareholder's equity.
Su, Wi, Sp Qtrs. 3 cl. Prereq: 522.

525 Cost Accounting U G 5
Managerial decision making in organizations with an emphasis on the use of financial data; theory and practice of management control.
Su, Au, Wi, Sp Qtrs. 5 cl. H525 (honors) may be available to students enrolled in an honors program or by permission of Honors Director. Prereq: 521 (or 212 and Math 152) and Bus-Mgt 330 and 331; or permission of instructor.

531 Introduction to Accounting Information Systems U G 5
The design and control of computer-based accounting information processing systems.
Su, Au, Wi, Sp Qtrs. 2-1/2 hr. H531 (honors) may be available to students enrolled in an honors program or by permission of Honors Director. Prereq: 212 and Cptr/Inf 200 and Bus-Mgt 330 and 331; or permission of instructor.

532 Foundations of Business Information Systems U G 5
Technical foundation in programming interactive business information systems.
Au Qtr. 2-1/2 hr. H532 (honors) may be available to students enrolled in an honors program or by permission of Honors Director. Prereq: 212 and Cptr/Inf 214 and Bus-Mgt 330 and 331; or permission of instructor.

524 Advanced Accounting U G 4
Accounting for business enterprises emphasizing business combinations, consolidated financial reporting, foreign currency transactions and statement translation, and partnerships and governmental not-for-profit accounting.
Su, Au, Wi, Sp Qtrs. 2-1/2 hr. H624 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 523 or equiv.

526 Tax Accounting I U G 4
Fundamentals of the federal income tax, and how it influences taxpayer decisions. Emphasis is on individuals and businesses organized as proprietorships, but the rules generally applicable to all taxpayers are covered.
Su, Au, Wi, Sp Qtrs. 2-1/2 hr. H626 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 521 or equiv.

627 Auditing Principles and Procedures U G 4
Basic concepts and standards of auditing; audit procedures and working papers; internal and external audit reports.
Su, Au, Wi, Sp Qtrs. 2-1/2 hr. H627 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: 523 or equiv.

H628 Accounting Research and Practice U G 4
Researching accounting concepts and standards underlying corporate and noncorporate financial statements including consideration of typical accounting problems.
Sp Qtr. 4 cl. Prereq: Sr standing and be enrolled in an Honors Program or permission of instructor. This course may be Progress ("P") or letter graded.

634 Topics in Financial Accounting U G 4
Discuss and employ a systematic approach to inverting to transactions from financial statements with illustrations using large companies.
Sp Qtr. Prereq: 522.

635 Management Control Systems U G 4
Advanced topics in management control, strategic interactions within the firm.
Sp Qtr. Prereq: H519 or 525.

6361 Tax Accounting II U G 3
Intensive study of the federal income tax treatment of business corporations and partnerships, with particular attention to tax planning by these businesses and their owners.
3 cl. Prereq: 525 and 626 or equiv.

6481 Tax Research Seminar U G 3
Case studies requiring an in depth examination of the tax aspects of situations frequently encountered by businesses and individuals.
3 cl. Prereq: 626 and permission of instructor.

651 Analysis and Design of Management Information Systems U G 4
Investigation and application, through real-world projects, of concepts and tools used in the analysis and design of management information systems.
Wi Qtr. 2-1/2 hr. Prereq: Cptr/Inf 516 and Bus-Mgt 330 and 331; or permission of instructor.

553 Business Data Communications U G 4
Study of technological, economic, and organizational issues concerning computer based networks for business data communications.
Wi, Qtr. 2-1/2 hr. Prereq: Jr or sr standing as an Information Systems major in BUS and Bus-Mgt 330 and 331; or permission of instructor.

655 Management of Office Information Systems U G 4
Surveys concepts and technologies for modeling, developing, and managing office information systems to enhance office efficiency and productivity.
Sp Qtr. 2-1/2 hr. Prereq: S31 or 532 or Cptr/Inf 570 and Bus-Mgt 330 and 331; or permission of instructor.
Accounting and Management Information Systems

657 Decision Support and Expert Systems G 4
Study of computer-based systems designed to support decision-making within the organization.
Wi Qtr. 2 hr cl. Prereq: Cptr/Inf 516 and Bus-Mgt 330 and 331; or permission of instructor.

659 Information Systems Planning and Management G 4
Planning and management of the information system function in business organizations with emphasis on the problems involved.
Sp Qtr. 2 hr cl. Prereq: Cptr/Inf 200 and 214, or cr grad standing, and Bus-Mgt 530 and 531; or permission of instructor.

693 Individual Studies U G 1-10
Individual study projects in selected areas of accounting and management information systems.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-10
Group study projects in selected areas of accounting and management information systems.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

711 Financial Accounting G 4
A survey of the principles and methods by which financial information about an organization is collected and processed for external users; analyses and interpretation of financial data.
Su, Au, Sp Qtrs. 2 hr cl. Prereq: Grad standing or permission of Office of Graduate Business Programs. Not open to students in revised MBA Program.

783 Honors Research U 1-5
Special topics research in accounting and/or management information systems; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business; 3.40 cumulative pt-hr ratio, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course may be Progress ("P") or letter graded.

811 Management Accounting G 3
An examination of the use of accounting information in managing an organization; cost determination and analysis; economic decision-making; business planning and control over operations and property.
2 hr cl. Prereq: 711 or equiv. Not open to grad students in accounting.

823 Managerial Accounting for Decision Making G 4
Cost systems with emphasis on the appropriate application of system outputs to management decisions.
Sp Qtr. 2 hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

824 Corporate Financial Reporting G 4
An examination of major aspects of corporate financial reporting by management under generally accepted accounting principles including coverage of disclosures required for traded securities, tax aspects of mergers and acquisitions, auditing of financial reports, and income and financial reporting on managerial behavior, financial analysis, and auditing.
Wi Qtr. 2 hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

826 Tax Planning for Managerial Decision Making G 4
Examination of the impact of taxes on several important business decisions; recognition of tax problems and planning opportunities.
Wi Qtr. 2 hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

827 Management Control Systems G 4
Aspects of organizations impacting the design, implementation, and revision of management control systems for private and public enterprises including discussion of responsibility centers, transfer pricing, planning, budgetary reporting, incentive compensation, operational auditing, and the impact of taxation on decision-making.
Sp Qtr. 2 hr cl. Prereq: 811 or MBA 801 or 802 or permission of instructor.

828 Financial Information and Valuation G 4
Valuation of securities, companies and debt using accounting based models of valuation such as price-to-book models, price-to-earnings models, earnings forecasts and EVA.
Au Qtr. 2 hr cl. Prereq: MBA 810 or 811.

834 Corporate Information Systems Management G 4
Case studies of the impacts of information technology on business organizations and its effective planning and control.
Au Qtr. 2 hr cl. Prereq: MBA 831 or 832 or permission of instructor.

835 Systems Analysis and Design for Managers G 4
Practical experience in software development for managers of business systems.
Wi Qtr. 2 hr cl. Prereq: MBA 831 or 832.

837 Management of Corporate Data Resources G 4
Investigation of concepts and techniques for data management with emphasis on planning and administrative issues and on the linkage between data and corporate strategy.
Au Qtr. 2 hr cl. Prereq: MBA 831 or 832.

838 Emerging Technologies and Electronic Commerce G 4
Provide an understanding of the opportunities, potential threats and important issues surrounding electronic commerce and emerging technologies.
Sp Qtr. 2 hr cl. Prereq: MBA 831 or 832.

844 Financial Accounting Theory G 3
Intensive study of theories of income measurement and asset valuation.
2 1/2 hr cl. Prereq: 524 or written permission of instructor.

845 Controllership G 3
The accounting executive's role in the management of an enterprise; accounting data for planning, coordination, control, and protection.
Sp Qtr. 3 cl. Prereq: 811 or written permission of instructor.

852 Governmental and Non-Profit Accounting G 3
The application of accounting principles to governments and other not-for-profit entities; problems relating to funds, appropriations, and budgetary controls.
Au Qtr. 3 cl. Prereq: 711 or equiv or permission of instructor. Cross-listed in Public Policy and Management.

861 Seminar in Accounting G 5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

893 Individual Studies G 1-6
Individual study projects in related areas in Accounting and Information Systems.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Open only to graduate students. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies G 1-6
Group study projects in selected areas of accounting and management information systems.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

998 Research in Accounting: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research in Accounting: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Aeronautical and Astronautical Engineering

326 Harold A. Bolz Hall, 2036 Neil Avenue Mall, 292-2691

200 Introduction to Aerospace Engineering I U 5
Introduction to aerospace design, with emphasis on aerodynamics and aircraft performance.
Au Qtr. 4 cl, 1 2-hr lab. Prereq or conc: Math 152, Physics 131, and a minimum cumulative pt-hr ratio of 2.00. This course is available for EM credit.

201 Introduction to Aerospace Engineering II U 5
Introduction to aircraft stability; propulsion integration; introduction to astronautics.
Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 200 and a minimum cumulative pt-hr ratio of 2.00. This course is available for EM credit.

405 Thermodynamics U 4
Introduction to the properties and behavior of aerodynamic fluids from microscopic and macroscopic points of view.
Sp Qtr. 4 cl. Prereq: 201 and conc: 480.

416 Design of Flight Vehicles U 3
Continued design work on vehicle developed in 515. Sp Qtr. 3 2-hr labs. Prereq: 515.

510 Aerospace Laboratory
Laboratory demonstrations and experiments in aerodynamics, aeroelasticity, propulsion, and structures of flight vehicles.
1 4-hr lab. Open only to Aero Eng majors. GEC courses.
510.01 Aerospace Laboratory I U 2
Laboratory demonstrations and experiments in aeronautics and astronautics.
Au Qtr. Prereq: 520, 560, and a second writing course, concur: 561 or 626.

510.02 Aerospace Laboratory II U 2
Laboratory demonstrations and experiments in propulsion and gas dynamics.
Wi Qtrs. Prereq: 530, 550, and a second writing course, concur: 561.

510.03 Aerospace Laboratory III U 2
Laboratory demonstrations and experiments in structures, dynamics, and control.
Sp Qtrs. Prereq: 545, 620; and a second writing course; prereq or concur: 544.

512 Systems Integration I U 1
Integration of material from structures, fluids and dynamics courses by means of industrially relevant design projects.
Au Qtr. 1 2-hr lab. Concur: 520, 530, 542. This course is Progress ("P") graded. 3 quarter sequence. Credit will be awarded upon completion of 514.

513 Systems Integration II U 1
Integration of material from structures, fluids and dynamics courses by means of industrially relevant design projects. Continuation of 512.
Wi Qtr. 1 2-hr lab. Concur: 521, 543, 560. This course is Progress ("P") graded. 3 quarter sequence. Credit will be awarded upon completion of 514.

514 Systems Integration III U 1
Integration of material from heat transfer and propulsion courses by means of industrially relevant design projects. Continuation of 513.
Sp Qtr. 1 2-hr lab. Concur: 550, 570, Elec Eng 300. 3 quarter sequence. Credit will be awarded upon completion of 514.

515 Preliminary Design of Flight Vehicles U 4
Wi Qtr. 2, 3, 2-3 hr labs. Prereq: 520, 550, and 560.

520 Flight Vehicle Dynamics U 4 G 4
Introduction to the concept of dynamic stability and to the dynamics of rigid aircraft and satellite vehicles.
Au Qtr. 4 cl. Prereq: 201, 480, and Eng Mech 430; concur: 512.

521 Linear Systems Engineering U 4 G 4
Analysis of a flight vehicle from a systems point of view. Free and forced response. Introduction to closed-loop and open-loop systems.
Wi Qtr. 4 cl. Prereq: 520, Math 571; concur: 513 and Math 572.

530 One-Dimensional Gasdynamics U 4 G 4
One-dimensional gasdynamics, including flow with friction and heat conduction, but with an introduction to oblique shocks and Prandtl-Meyer flows.
Au Qtr. 4 cl. Prereq: 201, 405, 480, and concur: 512.

542 Flight Vehicle Structures I U 4 G 4
Load distributions, temperature distributions, and allowable stresses for flight vehicle structures; derivations of basic equations for analysis of flight vehicle structural components.
Au Qtr. 4 cl. Prereq: 480 and concur: 512 and Math 572.

543 Flight Vehicle Structures II U 4 G 4
Stress analysis of flight vehicle structures.
Wi Qtr. 4 cl. Prereq: 542 and concur: 513.

544 Structural Design of Flight Vehicle Components U 4 G 4
Design of joints; tension, bending, shear, and compression members; diagonal tension field beams, box beams, and pressure structures.
Wi, Sp Qtrs. 2 cl., 2 3-hr labs. Prereq: 543, 545.

545 Introduction to Structural Dynamics of Aerospace Vehicles U 4
Shape dynamics of flexible aircraft components and flexible spacecraft; coupling between attitude and flexible dynamics; modal methods, response studies, and computer implementation.
Au Qtr. Prereq: 520, 543, 550, 561; Math 513 Eng Mech 430.

550 Principles of Flight Vehicle Propulsion U 4 G 4
Fundamentals of aerospace propulsion including engine cycles and analysis of various air-breathing engines and rocket engines.
Sp Qtr. 4 cl. Prereq: 530; concur: 514 and 570.

560 Fundamentals of Aerodynamics U 4 G 4
Fundamentals of low- and high-speed inviscid aerodynamics.
Wi Qtr. 4 cl. Prereq: 490, 530, and concur: 513.

561 Compressible Aerodynamics U 4 G 4
The fundamentals of the aerodynamics of compressible fluids.
Au Qtr. 4 cl. Prereq: 530, 560, and 580.

570 Viscous Flow and Heat Transfer U 4 G 4
Fundamentals of viscous flow, laminar and turbulent boundary layers, aerodynamic heating, effects of body forces and elements of radiative transfer.
Sp Qtr. 4 cl. Prereq: 480, 560, and concur: 514.

580 Analytical Methods in Aeronautical and Astronautical Engineering U 4 G 4
Application of selected topics in mathematics to analysis in the field of aeronautics and astronautics. 
Au Qtr. 4 cl. Prereq: 202 and Math 415 and 568.

612 Aircraft Flight Test Engineering U 4 G 4
A determination of the performance, stability, controllability, and handling qualities of general aviation aircraft through flight tests. 
Sp Qtr. 3 cl., 1 2-hr lab. Prereq: 520 and 580, or equiv with permission of instructor.

615 Introduction to Computational Aerodynamics U 4 G 4
Introduction to computational methods used in aerodynamic flow problems; applications to airfoil analysis and design. 
Wi Qtr. 4 cl. Prereq: 560, 581 and Engr Graph 167, or equivs.

616 Advanced Aerospace Vehicle Design U 4 G 3
Configuration formulation, performance and analysis, propulsion system design and integration, material selection, structural efficiency, CAD/ CAM, computer simulations.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 416, 515, or 515H, or permission of instructor. Continuation of 416/515. Repeatable to a maximum of 9 cr hrs.

620 Aircraft and Spacecraft Automatic Control Systems I U 4 G 4
Control theory as applied to analysis and design of flight control systems; components of automatic flight control systems. 
Wi Qtr. 4 cl. Prereq: 520, 543, 521 and Elec Eng 300.

621 Aircraft and Spacecraft Automatic Control Systems II U 4 G 4
Control theory as applied to analysis and design of control systems for complex flight structures; interaction between structural flexibility and control systems. 
Wi Qtr. 4 cl. Prereq: 520, 521 and 620.

628 Orbital Mechanics U 4 G 4
Satellite orbit analysis and multi-staging of rockets.
Sp Qtr. 4 cl. Prereq: 202, 520, 521 or Eng Mech 430. Not open to students with credit for 725.

693 Advanced Study in Flight Dynamics and Flight Control U 2-10 G 4
Special studies in aeromechanics and dynamics of flight vehicles; one or more areas, including aircraft structures, aerodynamics, propulsion, flutter and vibration, and stability and control.
Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies in Aeronautical and Astronautical Engineering U 4 G 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs.

720 Stability and Control of Flight Vehicles U 4 G 4
Sp Qtr. 4 cl. Prereq: 520, 620.

745 Aeroelasticity I U 4 G 4
Dynamical loads analysis of elastic flight vehicles subjected to unsteady aerodynamic loads.
Sp Qtr. 4 cl. Prereq: 521, 543 and 560.

751 Advanced Propulsion U 4 G 4
Characteristics and performance of air breathing flight vehicles and their components (inlets, turbo-machinery, combustors, and expansion nozzles). 
Au Qtr. 4 cl. Prereq: 550.

760 Advanced Compressible Flow U 4 G 4
Two-dimensional supersonic flow theories.
Au Qtr. 4 cl. Prereq: 561 or equiv.

761 Advanced Aerodynamics U 4 G 4
Predictions of pressure distributions, forces, and moments of lifting configurations.
Sp Qtr. 4 cl. Prereq: 760.
Aerodynamics of Viscous Compressible Flows G 4
Analysis of laminar boundary layers in high speed flows. Introduction to interacting boundary-layer theory and triple-deck theory, three-dimensional boundary layers.
Wi Qtr. 4 cl. Prereq: 570.

Hyponic Flow G 4
Introduction to the analysis of inviscid hypersonic flow fields.
Au Qtr. 4 cl. Prereq: 561.

Theory of Deformation and Flow G 3
General treatment of the basic principles underlying the mechanics of deformable media from macroscopic point of view.
Au Qtr. 3 cl. Prereq: 543, 560, and 570 or equiv. Required of all first yr grad students.

Deformation of Aerospace Structures G 3
Application of the unified theories and principles of solid and fluid mechanics to vehicular structures with emphasis on aerospace structures.
Wi Qtr. 3 cl. Prereq: 590.

Analytical Methods in Engineering I G 4
Advanced methods for solution of partial differential equations with applications to fluid dynamics and heat transfer; topics include Green's function, integral transforms and asymptotic solutions.
Wi Qtr. 4 cl. Prereq: 560 and 580; or equiv.

Analytical Methods in Engineering II G 3
Continuation of 802 with emphasis on the solution of singular perturbation problems.
Sp Qtr. 3 cl. Prereq: 802.

Aerodynamics of Chemically Reacting Fluids G 3
The aerodynamics of one-dimensional compressible flow with chemical reactions and wave propagation.
Au Qtr. 3 cl. Prereq: 800.

Flight Vehicle Performance Analysis G 3
Analysis of flight vehicle performance in planetary atmospheres.
Au Qtr. 3 cl. Prereq: 550 and 781.

Advanced Flight Vehicle Stability and Control G 3
Advanced studies in stability of systems, non-linear systems, Lyapunov method, dynamics in extra-terrestrial atmospheres, new control methods.
Wi Qtr. 3 cl. Prereq: 720.

Advanced Structures for Flight Vehicles G 3
Advanced analysis and design of aircraft structures and/or structural components including thermal, inelastic, and buckling effects.
Sp Qtr. 3 cl. Prereq: 543, 606.

Optimal Aerospace Structural Design G 3
Optimal design of aircraft and spacecraft structural components; emphasis on the issues of mathematical modeling of design problems for optimization and solution search techniques.
Sp Qtr. 2 1/2 hr. cl. Prereq: 542, 543, and 801. Not open to students with credit for 842 given in Spring Qtrn 1990-94.

Non-Equilibrium Flow Dynamics G 3
Relaxation, dissociation, waves (sound, shock) nozzle flow and design collisional energy transfer in gases.
Sp Qtr. 3 cl. Prereq: 530 or equiv.

Advanced Propulsion Problems G 3
Combustion instability, free radicals as energy source, space propulsion problems, noise of exhaust jets, energy conversion, solid propellants, heat transfer in rocket engines, and cascade theory.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 751. Repeatable to a maximum of 9 cr hrs.

Advanced Topics in Aerodynamics G 3
Topics to include unsteady aerodynamics, transient wave phenomena, interactive and separated flow, transonic flows.
Au Qtr. 3 cl. Prereq: 750. Repeatable to a maximum of 6 cr hrs.

Advanced Boundary Layer and Heat Transfer Theory G 4
Advanced topics in the areas of boundary layer and heat transfer phenomena.
Wi, Sp Qtrs. 4 cl. Prereq: 771 and 800; or permission of instructor. Repeatable to a maximum of 8 cr hrs.

Advanced Viscous Flow Theory G 3
Three-dimensional viscous flow at low and high Reynolds number; stability theory; statistical theories of turbulence.
Wi Qtr. 3 cl. Prereq: 771 and 800.

Hydrodynamic Stability of Fluid Motions G 4
Instability of inviscid and viscous parallel flows; thermal and centrifugal instability boundary-layer transition; and concepts of linear, nonlinear, and secondary instability analysis.
Sp Qtr. 4 cl. Prereq: 570, 800 or equiv, or permission of instructor. Not open to students with credit for Mech Eng 856. Cross-listed in Mechanical Engineering.

Molecular Theory of Gas Flows G 3
Theory of gas flows from molecular points of view.
Au Qtr. 3 cl. Prereq: 800 concur.

Computational Fluid Dynamics G 4
Advanced numerical methods for solving Navier-Stokes equations as well as equations for inviscid and boundary layer flows. Bodonyi, Herbert, and Scott.
Sp Qtr. 4 cl. Prereq: 615 or Mech Eng 707. Not open to students with credit for Mech Eng 811. Cross-listed with Mechanical Engineering 811.

Introduction to Turbulence G 3
Turbulence theory fundamentals and tools used to understand the physical mechanisms involved and their application to modeling and experiment.
Sp Qtr. 3 cl. Prereq: 570, 800 or equiv, or permission of instructor. Not open to students with credit for Mech Eng 813 and Chem Eng 815.09. Cross-listed with Mech Eng 813 and Chem Eng 815.09.

Seminar G 1
Au, Wi, Sp Qtrs. 1-2 hr. cl. Repeatable to a maximum of 15 cr hrs. Required of all grad students in aero eng.

Advanced Topics in Aeronautical and Astronautical Engineering G 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.

Group Studies in Aeronautical and Astronautical Engineering G 1-15
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

Research in Aeronautical and Astronautical Engineering G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

African-American and African Studies
486 University Hall, 230 North Oval Mall, 292-3700
See also Hauwa, Shona, Swahili, Twi, Yoruba, and Zulu.

Introduction to African-American and African Studies U 5
Introduction to the impact of broad historical forces such as colonization and capitalist slavery on race relations; the interdependence of ideology and social structure.
Su, Au, Wi, Sp Qtrs. 3 cl, 2 1-hr labs. GEC soc sci individuals and groups course.

African Civilizations to 1790 U 5
Exploration of the political, social, and economic history of pre-colonial African civilizations, using a variety of interdisciplinary approaches and materials.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for History 121. Cross-listed in History. GEC historical survey course.

African Civilizations, 1790 to the Present U 5
Exploration of the political, social, and economic history of the colonial and independent African countries, using a variety of interdisciplinary approaches and materials.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 121 or History 121. Not open to students with credit for History 122. Cross-listed in History. GEC historical survey course.

Introduction to African American Literature U 5
Survey of the literature of African descendants in the United States from 1750 to 1915.
Au, Wi, Sp Qtrs. 5 cl. Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

Black Psychology: New Behavioral Perspectives U 5
Introduction to black psychology: emphasis on theories, issues, and applications of the discipline.
2-2 hr cl. SS A075 Cond course.
208 Small Ensembles U 1
Au, Wi, Sp Qtrs. 2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Each decimal subdivision repeatable to a maximum of 18 or hrs. VPA Admis Cond courses.

208.20 African Performing Ensemble
1-2 hr cl. Repeatable to a maximum of 18 or hrs, including cr hrs earned in 199.20 and Music 199.20 and 208.20. Cross-listed in Music.

Social Problems

218 Black Urban Experience U 5
Examination of the major social science literature which analyzes the black urban experience.
Wi Qtr. 2-2 hr cl. Repeatable to a maximum of 10 cr hrs. GEC soc sci individuals and groups course.

222 Economic Problems of Black America U 5
Economic problems of black Americans including economic history, job opportunities, income, consumer purchases, housing, business enterprises.
5 cr. Prereq: 5 cr hrs in econ or permission of instructor. SS Admis Cond course.

230 The Black Woman: Her Role in the Liberation Struggle U 5
The political role of the black woman in the struggle for black freedom; examination of changing laws and customs affecting the status of black women.
Su, Au, Wi, Sp Qtrs. 3 cr. GEC social diversity course.

244 Survey of African and African-Derived I usic in the Western World U 3
An introduction to traditional African music and its role in the history and development of African-American music with its concomitant socio-political milieu.
Au, Sp Qtrs. 3 cr. Not open to students with credit for Music 244. Cross-listed in Music. VPA Admis Cond course.

251 Introduction to African Literature U 5
An assessment of the oral prose tradition and written prose of African literature; specific emphasis placed on student reading from primary sources.
Su, Au, Wi, Sp Qtrs. 5 cr. GEC arts and hums lit course.

254 Themes in African-American Literature U 5
Survey of themes in the literature of African descendants in the United States from 1915 to present.
Wi Qtr. 5 cr. GEC arts and hums lit course.

255 African-American Life through Autobiographies U 5
The experiences of black people in America as revealed in autobiographies of African-Americans.
Sp Qtr. 5 cr. Prereq: 101 or permission of instructor.

261 Black-White Behavior U 5
A survey of the social significance of important behavioral elements affecting black-white relations.
Su, Wi Qtrs. 5 or 2-2 hr cl. SS Admis Cond course.

270 Contemporary Black Drama U 5
A literary analysis and discussion of plays by black playwrights in recent times.
Wi Qtr. 2-2 hr cl. Prereq: Permission of instructor. GEC arts and hums lit course. VPA Admis Cond course.

271 Theatre Practice in Black Drama U 5
Local performance of selected black plays.
2-2 hr cl. Prereq: Permission of instructor. VPA Admis Cond course.

Introduction to African-American Literature
See English 281. Offered in cooperation with African-American and African Studies.

281 Major Themes in African and African-American Cultures and Civilizations U 5
A broad and comprehensive survey of the cultures and heritage of African and African-Americans.
5 cr. SS Admis Cond course.

290 Workshop in Visual Communication U 5
The study, analysis, and evaluation of the visual environment of the black community.
2-2 hr cl. Repeatable to a maximum of 15 cr hrs.

294 Group Studies U 1-5
Groups of students are given an opportunity to pursue special studies not otherwise offered.
Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs.

295 Black Consumer Economics U 5
Economic problems faced by black Americans in their purchases of goods and services.
5 cr. Prereq: 222 and 5 cr hrs of econ; or permission of instructor.

293 History of African-Americans U 5
2 2-hr cl. Cross-listed in History.

323.01 History of African-Americans in the Age of Slavery
Origins of modern slavery; its development in the U.S.; the evolution of African-American life and culture from 1619 to the end of the Civil War.
Au, Wi Qtrs. Not open to students with credit for 223 or 345; or History 225, or 260.

323.02 History of African-Americans from Emancipation to the Present
The rise of debt peonage among blacks; the formation of the northern ghettos; the Civil Rights Movement and beyond.
Au, Wi Qtrs. Not open to students with credit for 224, 238, or 345; or History 224, 290, or 323.02.

326 Black Americans and the Legal System U 5
An examination of the role of the legal system in the social and political dynamics of blacks in American society.
Su, Au, Sp Qtrs. 5 cr.

327 Introduction to African Politics U 5
Examination of dynamics of nation-building in African countries in transition from colonial dependencies to modern nation-states.
Au Qtr. 5 cr.

338 African Territories as Nation-States: Selected Case Studies U 5
Case studies of selected African territories gaining independence in the aftermath of the Second World War.
5 cr.

342 Music, Religion, and Ritual in Africa U 5
Survey of musical and religious expressions in distinctive African societies, focusing on traditional contexts and contemporary Christian contexts.
Sp Qtr. 2-2 hr cl. Prereq: 101 or Music 140 or permission of instructor. GEC arts and hums cultures and ideas course.

345 Early African-American Thinkers U 5
Designed to acquaint students with race, gender, class, nationality, and other ideologies embedded in American political and social institutions.
Au, Wi Qtrs. 5 cr. Not open to students with credit for 545. GEC arts and hums lit course.

350 History of Modern Africa U 5
General survey of political, economic, and social developments in colonial and post-independence Africa.
5 cr or 2-2 hr cl. Prereq: One 10 hr GEC historical survey sequence or permission of instructor. Not open to students with credit for History 292. Cross-listed in History.

352 African-American Cultural and Intellectual Tradition U 5
Selections in the experience of the black man in America including slavery and bondage, emancipation, integration, and revolt.
Wi Qtr. 5 cr.

361 Psychology of the Black Experience U 5
An analysis of personality theories commonly applied to black Americans and the black experience.
Au Qtr. 5 or 2 2-hr cl.

367 Second Writing Course U 5
Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing and social diversity courses.

367.02 African-American Theatre History
Examination of the aesthetic and sociological evolution of American African-American theatre and its literature.
Au Qtr. 5 cr. Not open to students with credit for Theatre 367.02. Cross-listed in Theatre.

367.03 African-American Voices in U. S. Literature
Discussion, analysis, and writing about issues presented through the diverse voices of African-American literature.
Au, Wi, Sp Qtrs. 2-2 hr cl. Not open to students with credit for English 367.03. Cross-listed in English.
367.04 Black Women Writers: Text and Context
Writing and analysis of black women's literary representations of issues in United States social history. 
Su, Au, Wi, Sp Qtr's. 2 2-hr cl. Not open to students with credit for Wom Stds 215 or 367.04. Cross-listed in Women's Studies.

375 Early African American Art U 5
The work of African-American artists prior to 1920. 
2 2-hr cl.

376 History of Jazz I U 5
An in-depth study of the periods, trends, major performers/composers, styles and influences of jazz from its beginnings through the Swing era. 
Wi Qtr. 5 cl.

379 History of Jazz II U 5
Continuation of 378 from Bop through current styles. 
Sp Qtr. 5 cl. Prereq: Music background recommended.

American Ethnic Relations

385 Southern Africa: Society and Culture U 8
A study of the social and cultural developments in Southern Africa, and the environment. 
Sp Qtr. 2 2-hr cl or 5 cl, 2-week study tour in South Africa. Prereq: 122 or 251, or History 122, or Shana 104, or Zulu 104. Students will pay all travel and subsistence costs. GEC arts and humanities and ideas course.

391t Historical Geography of Black America U 5
A study of the spatial effects of migration, segregation, and regionalization in America. 
5 cl.

391t The Theory and Praxis of a Black Studies Paradigm U 5
Introduction to the various methodologies that have been employed in the conceptualization and implementation of the transdisciplinary paradigm of black studies. 
2 2-hr cl. Prereq: 101, one of the 367 decimals, and Rank 2 standing or higher.

451t Black Experience in Caribbean, African, and African-American Literatures U 5
Exploration of themes, attitudes, and parallels in black literatures of Africa, the United States, and the Caribbean; emphasis on negritude and Pan-Africanism. 
5 cl. Prereq: Jr or sr standing.

452t Swahili Literature I U 5
Introduction to oral and classical Swahili literature in light of modern theories of literary analysis, criticism, and appreciation. 
2 2-hr cl. Prereq: Swahili 104. GEC arts and humanities and ideas course.

453t Swahili Literature II U 5
An introduction to the origins and development of Swahili literature with emphasis on the novel, the play, and modern verse. 
2 2-hr cl. Prereq: Swahili 104. GEC arts and humanities and ideas course.

460t Political Thought in African Literature U 5
A study of political thought of selected African novelists in the 20th century. 
2 2-hr cl.

504 Black Politics U 5
Economic, political, and social constraints on the development of black political power; the efforts made by black people in recent times to organize for effective political action. 
Au Qtr. 5 cl. Not open to students with credit for Politi Sc 208 or 504. Cross-listed in Political Science.

527 Pan-Africanism and Nationalism U G 5
Pan-Africanism and nationalism in the development of Africa. 
Au Qtr. 5 cl.

530t African Political Systems: A Comparative Analysis U G 5
A comparative examination of problems of nation-building and national integration faced by selected African nations in the postcolonial period. 
5 cl.

549 Historical Evolution of the Black Community U G 5
The political, social, and economic background of the contemporary American black community. 
Wi Qtr. 5 cl.

551 Selected Topics in African-American and Related Literatures U G 5
Topics selected will relate to specific interests of enrolled students, who will develop an intensive analysis of the topic of their choice. 
Wi Qtr. 5 cl. Prereq: 261 or 361. GEC arts and humanities and ideas course.

552 Contemporary African-American Culture U G 5
African-American culture in 20th-century America. 
Au Qtr. 2 2-hr cl.

555t Topics in African-American History U G 5
Selected topics in African-American history from the origins of slavery to the present. 
2 2-hr cl. Prereq: One 10-hr GEC historical survey sequence and jr or sr standing, or permission of instructor. Each decal subdivision repeatable to a maximum of 10 cr hrs, including cr hrs earned in History 555.01 and 555.02. Cross-listed in History.

555.01 Topics in African-American History I U G 5
Selected topics in African-American history from the origins of African-American culture and slavery to emancipation. 
Wi Qtr.

555.02 Topics in African-American History II U G 5
Selected topics in African-American history from emancipation through segregation, and the Civil Rights Movement to the present. 
Sp Qtr.

571 Images of Black People in Media Production U G 5
The historical background of black drama in the media; development of new models for monitoring programming; the writing and production of drama. 
Sp Qtr. 2 2-hr cl. Prereq: Jr or sr standing.

580 Contemporary African-American Leaders U 5
The evolution of black leadership after World War II, from non-violence to black nationalism. 
5 cl.

581 Philosophy in Contemporary African Literature U 5
Discussion of African social and political thought as presented by selected African novelists. 
5 cl.

582t Studies in African-American Literature U 5
Topic varies; examples: Neo-slave narratives; the Harlem Renaissance; literature by African-American women. 
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: English 110 or 111 or equiv. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in English 582. Cross-listed in English.

584 Literature and Modern Experience in Africa U 5
A comprehensive view of the dominant thematic directions of African literature in the European languages, and their formal realization in aesthetic and symbolic terms. 
Wi Qtr. 2 2½ hr cl. Prereq: Any GEC second writing course (367) and enrollment in an honors program.

595t Theorizing Race U G 5
Introduction to issues of "race," consideration of the historical emergence and development of ideas of "race" and of racial practices, along with their contemporary formulations. 
2 2-hr cl. Prereq: GEC second writing course, 395 or Philos 200, or permission of instructor. Not open to students with credit for Philos 585. Cross-listed in Philosophy.

605 An Introduction to African-American English U G 5
Introduction to the structure and history of the varieties of English used by African-Americans and the relationship between language use and socio-cultural context. 
Wi, Sp Qtrs. 2 2-hr cl. Prereq: Permission of instructor; Linguisit 201 or equiv recommended. Not open to students with credit for Linguisit 605. Cross-listed in Linguistics.

630 Black Political Movements and Organizations U G 5
Analysis of black political movements and organizations from slavery to contemporary times. 
Au Qtr.

633 Black Community Politics: Welfare and Poverty U G 5
Welfare and poverty as social, economic, and political problems of the black community. 
Sp Qtr.
563 History of Islam in Africa U G 5
An examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions.
Wt Qtr. 2-2 hr cl. Prereq: 121 or 122, or History 121 or 122; or grad standing. Not open to students with credit for History 643.

565 Introduction to African Languages and Societies G 5
A survey of the interplay between languages and society in the African context.
Sp Qtr. 2-2 hr cl.

569 Slavery in Comparative Context U G 5
Different forms of slavery and other forms of unfree labor in different cultures, focusing mainly on Europe, the Americas, and Africa.
Wt Qtr. 2-2 hr cl. Not open to students with credit for History 669.

572 Central African History U G 5
Specific themes on central African history.
Au Qtr. 3 cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 636 or History 672.

573 West African History U G 5
An examination of the processes of state formation, trade, and civilization in Africa’s Sudanese and Guinean regions.
2-2 hr cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 538 or History 673.

574 Africa Before Colonial Rule U G 5
An examination of pre-colonial political, economic, and social systems, including material culture and agriculture.
2-2 hr cl. Prereq: 122 or History 122 or grad standing or permission of instructor. Not open to students with credit for 611 or History 674.

575 History of South Africa U G 5
An examination of the political and social developments in South Africa from the nineteenth century to the present.
2-2 hr cl. Not open to students with credit for 537 or History 675.

578 History of East Africa U G 5
An advanced survey of the history of East Africa (Kenya, Tanzania, Uganda, Rwanda, Burundi) from the precolonial through the contemporary era.
2-2 hr cl. Prereq: 122 or History 122 highly recommended for undergrads. Not open to students with credit for History 678.

590 African-American Children and Youth U G 5
Wt Qtr. 2-2 hr cl. Prereq: Jr, sr, or grad standing.

591 Black American Family U G 5
History of the black American family: origins, myths, and realities.
Au Qtr. 2 2/1-2 hr cl. Prereq: 101 or permission of instructor.

693 Individual Studies U G 1-5
Individual reading or research projects by special agreement between instructor and student.
Su, Au, W, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

694 Group Studies U G 1-5
Su, Au, W, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

712 Development of the Black Community U G 5
Rural and urban developments and their effects on black people in America.

718 Citizen Participation U G 5
Assessment and application of techniques of organization and action in the black community.
Sp Qtr. Repeatable to a maximum of 15 or hrs.

721 Economics of Discrimination U G 5
The economics of racial discrimination with emphasis on black Americans.
Sp Qtr. Prereq: 10 or hrs of econ, grad standing, or written permission of instructor.

725 Political Development of Sub-Saharan Africa U G 5
The processes and problems of political change in Sub-Saharan Africa.
Wt Qtr.

742 African Historiography and Methodology G 5
The study of sources, research methods, interpretations, and research trends in the field of African history.
Wt Qtr. 2 2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 or hrs, including or hrs earned in History 742. Cross-listed in History.

743 Studies in African History G 5
The study of the historical literature of Africa and various aspects of African history; topic vary.
Sp Qtr. 2 2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 or hrs, including or hrs earned in History 743. Cross-listed in History.

748 Contemporary Art Music Traditions of Africa and the Diaspora G 5
An examination of selected published and unpublished musical works by contemporary composers of sub-Saharan Africa and of African descent.
2 1/2-2 hr cl. Prereq: 101, Music 251 or 672, and grad standing in music; or permission of instructor. Not open to students with credit for Music 748. Cross-listed in Music.

751 Introduction to Graduate Studies in African Literature G 5
A broad survey of the development of African literature, its variations, genres and themes.
Prereq: Grad standing or permission of instructor.

752 Readings in African-American History U G 5
Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community.
Au Qtr. 2 1/2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 or hrs, including or hrs in History 752. Cross-listed in History.

753 The Discipline of African-American and African Studies G 5
Critical analysis of the development of African-American and African Studies as a discipline and the theoretical approaches to its subject matter.
2 1/2 hr cl. Prereq: Grad standing or permission of instructor.

Analysis and measurement of various forms of inequality, distortions, stereotypes, and omissions, primarily in the areas of race and ethnicity that relate to African people.
Au Qtr. 2 2 hr cl. Prereq: Grad standing.

756 Theorizing Race G 5
Critical examination of race and race theory perspectives from "the outside" and "the inside" as influenced by nation, class, gender, and imperialism.
Wt Qtr. 2 1/4 hr cl. Prereq: Grad standing or permission of instructor.

757 Introduction to Graduate Studies in African-American Literature G 5
757.01 Introduction to Graduate Studies in African-American Literature, 1746-1900
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1746 to 1900.
Wt Qtr. 2 2 hr cl. Not open to students with credit for English 757.01. Cross-listed in English.

757.02 Introduction to Graduate Studies in African-American Literature, 1900 to Present
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1900 to the present.
Sp Qtr. 2 2 hr cl. Not open to students with credit for English 757.02. Cross-listed in English.

762 Mental Health and the Black Community U G 5
Theoretical and practical approaches to the problems of mental health in the black community.
Wt Qtr. Prereq: 15 or hrs in social/behavioral sciences or permission of instructor.

775 Studies in Feminist Theory G 5
A series of courses which examine the relationships between feminist theories and other significant explanatory systems in the Western cultural traditions.
2-2 hr cl. Prereq: 5 or hrs in wom stds at the 500 or 600 level, or permission of instructor. Repeatable to a maximum of 20 or hrs in any combination of deci subdivision, including or hrs earned in Wom Stds 775. Cross-listed in Women's Studies.
Agricultural Communication

208 Agricultural Administration Building, 2120 Fyffe Road, 292-0450

200 Introduction to Agricultural Communication U 3
History and development of mass communication and its application in agriculture, with emphasis on career opportunities in agricultural communication. Whaley. Au Qtr. 3 cl. Limited to freshmen, sophomores, and transfer students. Not open to students with credit for 190.

300 Agricultural Communication Documents U 3
Methods for publishing and presenting agricultural information. Agunga Wi Qtr. 2 2-hr cl.

367 Agricultural Issues in Contemporary American Society U 6
Development of skills in reading, writing, speaking, listening, and critical thinking; exploration of a variety of topics related to agriculture and American society. Tucker. Su, Au, Wi, Sp Qtrs. 3 1-hr cl. Prereq: English 110 or 111 or equiv, soph standing; or permission of instructor. GEC/LAF course.

390 Oral Expression in Agriculture U 4
Oral expression theory and practice in an agricultural environment. Whaley Su, Au, Wi, Sp Qtrs. 3 1-hr cl, 1 2-hr lab. Prereq: Second writing course.

400 Writing for the Agricultural Media U 4
Experience in writing, editing, design, photography, and other processes involved in the production of the Agri-News. Tucker and Whaley. Sp Qtrs. 2 2 1/2-hr cl. Prereq: Journal 201, Agr Comm 387 or equiv or permission of instructor. Repeatable to a maximum of 8 cr hrs. GEC course.

489 Agricultural Communication Internship U 2-5
Coordinated and supervised experience in agricultural communication including reporting, writing, editing, photography, graphics, broadcasting, advertising, and public relations. Whaley. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Limited to majors in ag comm. Repeatable to a maximum of 9 cr hrs. A final written report and an evaluation from the supervisor must be submitted to the instructor. This course is graded S/U.

510 Public Information in Agriculture Communication U 3
Public information case studies, plans, and practices as applied to agriculture. Agunga. Wi Qtr. 3 cl. Prereq: Journal 431.

590 Senior Seminar in Agricultural Communication U 5
Capstone course addressing issues of the contemporary world as related to modern agricultural communicators. Agunga Sp Qtr. 5 1-hr cl. Prereq: Sr standing or completion of a minimum of 15 cr hrs toward the major, and second writing course. GEC course.

593 Individual Studies U 1-5
Students plan, conduct, and report on a special problem in agricultural communication not included in regular course work. Au, Wi, Sp Qtrs. Arr. Prereq: 2.50 cum pt-hr ratio and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

H683 Honors Project U 1-10
Conducting and reporting the honors project. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.C1, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H593, H699, 693, or H684. This course is graded S/U.

Agricultural and Construction
Systems Management

200 Agricultural Engineering Building, 580 Woody Hayes Drive, 232-6131

110 Engineering in Agriculture U 5
Basic concepts of engineering and technology essential to the development and function of improved systems for fulfilling our food and agricultural environment needs. Wi Qtr. 4 cl, 1 2-hr lab.

232 Small Air-Cooled Engines U 4
Principles of operation, maintenance, and repair of small air-cooled engines. Desmond Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs.
Agricultural Education

560 Management of Agricultural Machinery Systems U G 3
Selection and management of complex systems of machines using spreadsheets and computer models to develop and analyze alternatives. Stombaugh.
Wi Qtr. 3 cl. Prereq: 360.

575 Soil and Water Systems U G 3
Planning and managing drainage, irrigation, erosion prevention, and water storage systems. Brown.
Sp Qtr. 2 cl. 1-2-hr lab. Prereq: 370 and 371, or permission of instructor.
Not open to students majoring in food, agricultural, and biological engineering or civil engineering.

576 Water Management in the Landscape Environment U G 4
Planning, evaluation, and management of soil and water systems (drainage, irrigation, erosion control, water use, supply, quality) for landscape and container nursery plants. Brown.
Sp Qtr. 2-2 hr cl. Prereq: 370, 371, H&CS 300, Soil Sci 300.01, and 300.02; or permission of instructor.

591 Workshop U G 1-5
In-depth study of selected area of agricultural mechanization with emphasis on application of principles, objectives, methods, and equipment to organization, management, and teaching of agricultural mechanics.
Su, Au, Wi, Sp Qtrs. Prereq: Teaching or extension experience or permission of instructor. Repeatable to a maximum of 10 cr hrs.

591.01 General

600 Agricultural Safety and Health U G 3
Contemporary issues in agricultural safety and health; strategies and methods for the management of safety and health programs. Bean.
Wi Qtr. 2 cl. 1-2 hr lab. Prereq: Limited to jr and sr students with prereq of English 110, second writing course, and or oral expression course; or permission of instructor. GEQ third writing course, 600 and 605 together fulfill requirement.

605 Professional Development U 2
Developing and pursuing career plans; strategies and programs for employment, professional development, personal growth, and relationships.
Papitan.
Au Qtr. 1.2 hr cl. Prereq: Limited to jr and sr standing in AGR with prereq of a second writing course and an oral expression course; or permission of instructor. GEQ third writing course, 600 and 605 together fulfill requirement.

H693 Honors Project U 1-10
Conducting and reporting the honors project. Papitan.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr Int 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 or hrs as H693 or in conjunction with 293, 592, H593, H596, 693, or H693. This course is graded S/U.

693 Individual Studies U G 1-5
Problems not included in regular courses practice in development, organization, solution, and reporting on such problems.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Advanced studies in construction or agricultural systems management.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

Agricultural Economics

(See Agricultural, Environmental, and Development Economics)

Agricultural Education

208 Agricultural Administration Building, 2120 Ryne Road, 202-6321

280 Introduction to Agricultural Education U 5
A framework for the cultural, psychological, and sociological understanding of human behavior and development relevant to agriculture education, including supervised field experience in public schools, extension, and agribusiness.
Sp Qtr. 2-1 hr cl.

294 Group Studies U 1-5
Group studies for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

240 Fabrication of Metal in Agri-business and Agricultural Applications U 4
Principles and techniques in the fabrication of metal using welding and other processes needed in agricultural and agribusiness applications. Papitan.
Au, Wi, Sp Qtrs. 2 cl, 2-2 hr labs.

241 Building Materials and Construction in Agriculture U 4
Principles and techniques in the fabrication of wood, concrete, and masonry materials used in agri-business and agricultural applications. Alberty.
Su, Au, Wi, Sp Qtrs. 2 cl, 2 2 hr labs.

293 Individual Studies U 1-5
Work on problems not in regular courses; practice in development, organization, solution, and reporting on such problems.
Au, Su, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Group Studies U 1-5
Basic studies in agricultural and construction systems management.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

310 Electric Power for Agricultural and Residential Applications U 3
Principles and applications of systems and components essential for distribution and control of electricity for power, heat, and illumination in residences and agricultural structures. Lichtensteiger.
Sp Qtr. 2 cl, 1-2 hr lab. Prereq: Math 130 or 148; second writing course; jr or sr standing; or permission of instructor.

320 Facilities for Agricultural and Greenhouse Production U 5
Buildings and equipment for livestock, crop, and greenhouse production; selection and specification of ventilation systems, waste management alternatives, and construction materials. Lichtensteiger.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: Math 130 or 148, Physics 111.

330 Material Handling and Processing U 3
Principles and functional analysis of agricultural processing systems, with special emphasis on crop drying, handling, and storage. Keenan.
Sp Qtr. 2 cl, 1-2 hr lab. Prereq: Math 130 or 148, Biology 113.

360 Agricultural Machine Principles U 5
Principles underlying selection and use of agricultural machines, including power and energy requirements, performance evaluation, calibration, adjustment, and hydraulics. Lichtensteiger.
Au Qtr. 2-2 hr cl, 1-2 hr lab. Prereq: Math 130 or 148, and Physics 111.

370 Principles of Hydrology U 3
Principles of hydrology applied to agricultural and forest watersheds, including applications in drainage, erosion, irrigation, water supply, and water quality. Ward.
Au Qtrs. 3 cl. Prereq: Math 130 or 148.

371 Land Surveying for Agricultural and Environmental Systems U 2
Principles of land surveying applied to soil and water management on agricultural and environmental areas. Papitan.
Sp Qtr. 1 1 hr cl, 1-3 hr lab. Prereq: Math 130 or 148.

489 Internship in Agricultural Mechanization and Systems U 2
Ten weeks of planned and supervised experience in an approved business or industry providing professional experiences in agricultural mechanization and systems; written comprehensive report required. Papitan.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dept major, permission of adviser and 12 cr hrs in dept. Repeatable to a maximum of 4 cr hrs.

520 Planning Agricultural Facilities U G 3
Application of strategic planning, engineering economics, and farmstead planning techniques to the specification of facilities for agricultural and greenhouse production. Stowell.
Au Qtr. 2 cl, 1-2 hr lab. Prereq: 320 and Ag Econ 200 or Econ 200.

540 Construction Systems U G 3
Principles of planning, interpreting, and estimating as applied to standard construction, including procurement, accounting, logistics, and personnel management. Papitan.
Sp Qtr. 2 cl, 1-2 hr lab. Prereq: 241.

550 Pollution Control and Waste Utilization U G 3
Management and utilization of animal wastes, fertilizers, pesticides, crop residues, milk and food processing, and farmstead and urban solid wastes to abate environmental pollution at the urban-rural interface. Manci and Christy.
Sp Qtr. 3 cl. Not open for grad cr to students majoring in food, agricultural, and biological engineering.
580 Field Experience in Public Schools
Supervised participation in teaching and other professional responsibilities of teachers of agriculture including clinical analysis in conferences and seminars. Cano.
Au, Wi Qtrs. 8 hrs/day for 10 wks. Prereq: 530, minimum CPHR 2.50. Application required at least two quarters prior to enrollment.

580.01 Field Experience in Public Schools I U 5
Supervised participation in teaching and other professional responsibilities of teachers in agriculture in public schools.
Concur: 580.02, 580.03.

580.02 Field Experience in Public Schools II U 5
Clinical analysis of teaching agriculture in the public schools in conferences and seminars.
Concur: 580.01, 580.03.

580.03 Field Experience in Public Schools III U 5
Written assignments, lesson plans, and documentation of teaching agriculture in the public schools.
Concur: 580.01, 580.02.

585 Program Development in Public Schools U 3
Principles and procedures used in planning and conducting programs of agricultural education. Henderson.
Sp Qtr. 2 1/2-hr cl. Concur: 280.

594 Group Studies U 3
Group studies for students in specialized programs.
Su Qtr. Arr. Repeatable to a maximum of 15 hrs.

600 Contemporary World Issues in Agricultural Education U 5
Debate, consideration, and integration of agricultural education from a wider agricultural perspective, including international awareness, problem solving, and ethical decision-making. Henderson.
Wi, Sp Qtrs. 5 cl. Prereq: 560 or 570 or 580 or Agr Econ 401 and 402; and second writing course. GEC course.

621 Curriculum Development U G 3
Principles and practices used in developing courses of study in agriculture for high school and post-high school programs. Budke.
Su Qtr. 2 1/2-hr cl.

622 Continuing Education in Agriculture U G 3
Principles and practices involved in developing vocational, technical, and extension programs for out-of-school youth and adults. Scheer.
Sp Qtr. 1 2 1/2-hr cl.

631 Methods in Teaching Agriculture U G 3
Theory, principles, and procedures associated with effective instruction in agriculture at the secondary, technical, and college levels. Cano.
Su (1st term), Wi Qtrs. 1 2 1/2-hr cl.

640 Instructional Media in Teaching Agriculture U G 3
Theory and practice in developing and using instructional media and equipment, technical, and college levels. Budke.
Au, Sp Qtrs. 1 2 1/2-hr cl.

641 Occupational Experience in Agricultural Education U G 3
Principles and procedures used in selecting, planning, conducting, and evaluating occupational experience programs for students. Budke.
Su Qtr. 1 2 1/2-hr cl.

642 Youth Organizations U G 3
An analysis of youth organizations in vocational and extension education with emphasis on planning and conducting such programs. Cano, and Borden.
Su, Wi Qtrs. 1 2 1/2-hr cl.

643 Youth Program Management in Non-School Settings U G 3
Principles, theories, and practices involved in conducting, supervising, and managing a youth program. Borden.
Wi Qtr. 3 cl.

683 Honors Projects U 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H580.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 285, 593, H593, H599, 693, or H693. This course is graded S/U.

684 Internship in Agricultural Education U G 1-15
Guided participation to further enhance professional and/or technical competency in selected areas.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 or hrs. These courses are graded S/U.
684.10 Internship in Agricultural Education: Teaching Agriculture in Public Schools
Prereq: 580, Budke.

684.20 Cooperative Extension Education
Prereq: 530, Safrit

684.30 Technical
Prereq: 580, Budke.

684.40 Specialized Agriculture
Budke.

693 Individual Studies U G 1-5
Planning, conducting, and reporting a special study appropriate to the needs of the student.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt/hr ratio and written permission of instructor. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

770 Evaluation U G 3
Evaluation principles and procedures used in developing vocational, technical, and extension programs.
Wi Qtr. 2 1/2-hr cl.

790 Workshop in Agricultural Education U G 1-5
Intensive study of selected areas of agricultural education with emphasis on the application of principles and methods in attaining desired objectives.
Su, Au, Wi, Sp Qtrs. Minimum of 3 wks. Prereq: Teaching or extension experience. Repeatable to a maximum of 24 or hrs.

795 Seminar U G 1-3
1- or 2-hr cl. Prereq: Written permission of instructor. A maximum of 15 or hrs may be earned with not more than 6 hours in any one decimal subdivision.

795.01 Contemporary Problems
Au, Wi, Sp Qtrs. This course is graded S/U.

795.02 Problems and Issues
Wi, Sp Qtrs.

795.03 Leadership Development
Au, Wi, Sp Qtrs.

795.04 Program Development
Au Qtr.

795.05 Research and Evaluation
Au Qtr. 2 hr cl. This course is graded S/U.

795.06 Communication
Au, Sp Qtrs.

800 History and Philosophy of Agricultural Education G 3
Historical and philosophical underpinnings of agricultural education in its broadest context. McCracken.
Au Qtr. 1 2/1-hr cl.

810 Principles of Vocational-Technical Education G 3
An analysis of evolving concepts of vocational and technical education with emphasis upon principles underlying organizations and practice. Budke.
Wi Qtr. 1 3-hr cl.

811 Administration and Supervision G 3
Theories, concepts and principles for leadership, administration and management in communication, education, extension and community settings. Safrit.
Sp Qtrs. 1 2/1-hr cl.

812 Teacher Education G 3
Principles and methods of teacher education in agriculture including selection and guidance of students, curriculum, field experience, placement, in-service education, and research.
Au Qtr. 1 2/1-hr cl.

821 Administrative Practices in Vocational Education G 3
A study of the concepts of vocational education program administration, including management skills, policy development, staff management, finance, and program evaluation. Budke.
Su, Sp Qtrs. 1 2/1-hr cl. Not open to students with credit for 811 or Ed-Votec 821. Cross-listed in Edu PAES 828.

833 Program Planning G 3
Planning, implementation, and management of instructional systems in education and training programs. Safrit.
Au Qtr. 1 2/1-hr cl.

830 Supervision of Instruction in Vocational Education G 3
A study of the concepts of vocational education supervision including leadership styles, improving instruction, and program and personal evaluation.
Sp Qtr. 1 2/1-hr cl. Not open to students with credit for Ed-Votec 830. Cross-listed in Edu PAES.

931 Teaching and Learning in Agricultural Education G 3
Cognitive, psychological and teaching methods relevant to agricultural education including human development and problem solving. Cano
Wi Qtr. 1 2/1-hr cl.

833* Vocational Education Program Planning G 3
A study of the planning, development, management, and evaluation of instructional systems and vocational education programs.
Sp Qtr. 1 2/1-hr cl. Not open to students with credit for 823 or Ed-Votec 833. Cross-listed in Edu PAES.

840 Agricultural Communication Theory and Practice G 3
Communication theories and methods applied to the food, agricultural and environmental sciences, including social scientific foundations of communication research. Agungula.
Au Qtr. 2 1/2-hr cl.

843 Program Development in Extension G 3
Principles, theory, and practice in developing state and local programs of Extension Education. Conklin
Wi Qtr. 1 2/1-hr cl. Prereq: 823 or permission of instructor.

885 Research Methods G 3
Principles and techniques of research appropriate for planning, conducting, and reporting research in vocational, technical, and extension education. L. Miller.
Su (1st term), 5 cl; Au, Wi, Sp Qtrs, 1 3-hr cl.

886 Research Design G 3
Development of effective design for research problems in vocational, technical, and extension education, including theory, models, and sampling. McCracken, and Glenn
Su (1st term), Au, Wi, Sp Qtrs. 2 1/2-hr cl. Prereq: 885 or equiv.

887 Analysis and Interpretation of Data G 3
Application and interpretation of descriptive and inferential statistics for research in vocational-technical and extension education, including the use of the computer. Warmbrod.
Au, Sp Qtrs. 1 2/1-hr cl. Prereq: 886 or equiv.

888 Instrumentation and Procedures for Data Collection G 3
Selection, development, and analysis of various types of instruments and procedures for collecting research data. Henderson.
Wi, Sp Qtrs. 2 1/2-hr cl. Prereq: 886 or equiv.

889 Advanced Studies G 3
Individual field study in partial fulfillment of needs for research experience. Su, Au, Wi, Sp Qtrs. Prereq: 885. Repeatable to a maximum of 9 or hrs. This course is graded S/U.

993 Individual Studies G 1-5
Planning, conducting, and reporting a special study appropriate to the needs of the individual student.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

995 Seminar in Research G 1-3
Further development and direction of individual studies and programs of research. Warmbrod
Au, Sp Qtrs. 1 2/1-hr cl. Prereq: 886. Repeatable to a maximum of 6 or hrs. This course is graded S/U.

999 Research G Arr
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Agricultural Engineering
(See Food, Agricultural and Biological Engineering)
Agricultural, Environmental, and Development Economics

103 Agricultural Administration Building, 2120 Fyffe Road, 292-7911

200 Principles of Food and Resource Economics U 5
Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use. Forster, Jones, Zulauf, Baldwin, Kraybill, Libby, Irwin.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Math 130 or equiv. Not open to students with credit for 200-N, or Econ 200. This course available for EM credit. BERG/GECLAR course. SS Admis Cond course.

H200 Principles of Food and Resource Economics U 5
Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use. Zulauf.
Au Qtr. 5 cl. Prereq: Math 131 or permission of instructor. Not open to students with credit for H200-N, or Econ 200. BERG/GECLAR course. SS Admis Cond course.

205 Data Analysis for Agribusiness and Applied Economics U 5
Introductory course in data analysis, stressing computer applications of probability and statistics, problems of data gathering, presentation, and interpretation in economics and business. Spotter and Jones.
Au, Wi, Sp Qtrs. 3 1-hr cl, 1 96-min lab. Prereq: Math 130. Not open to students with credit for Agr Educ 307, Agronomy 210, Animal Sci 210, Stat 125, 135, or 146. GEC course.

247 Career Assessment and Opportunities in Agribusiness and Applied Economics U 1
Identification of personal strengths and professional goals; exploration of career opportunities in agribusiness and applied economics; discussion of skills and courses necessary for specific career paths. Zulauf.
Wi Qtr. 1 1 1/2-hr cl. Prereq: Soph standing.

401 Principles of Agribusiness Management U 4
Introduction to agribusiness management principles and skills in the context of the four functions of management: planning, organizing, directing, and controlling. Enven and Forster.
Au, Wi, Sp Qtrs. 4 cl. Prereq: Basic spreadsheet competency and 200 or H200 or Econ 200 or H200.

402 Principles of Agribusiness Marketing U 4
Study of specific problems of marketing food and fiber products with emphasis on structures and institutions facing agribusinesses in domestic and international markets. Larson and Stout.
Au, Wi, Sp Qtrs. 4 cl. Prereq: 200, H200, Econ 200, or H200.

403 Principles of Agribusiness Finance U 4
Financial management of farms and agribusinesses; financial system, time-value of money, security valuation, capital budgeting, capital structure, portfolio analysis, financial institutions. Forster and Lines.
Wi, Sp Qtrs. 2 1/2-hr cl. Prereq: 200 or H200 or Econ 200 or Econ 200 and Acct/MIS 211 and GEC Data Analysis Course. Not open to students with credit for 416.

412 Farm Records and Analysis U 5
Nature and need for farm business records and analysis and interpretation of essential records from farm manager viewpoint; their use in income tax reporting. Lee.
Wi, Sp Qtrs. 2 1 1/2-hr cl, 1 2-hr lab. Prereq: 401 and Acct & MIS 211 or equiv.

426 Marketing Dairy Products U 3
A study of the principles of assembling, transporting, selling, pricing, distribution, marketing costs, and margin for dairy products. Thraen.
Au Qtr. 3 cl. Prereq: 200.

489 Internship in Agricultural Economics U 3
Supervised experience with an approved firm or organization; pre-approved outline, oral presentation, and written comprehensive report required. Su, Au, Wi, Sp Qtrs. Prereq: 401 or 402 or 403, or Econ 501, and written permission of major adviser. Open only to dept majors. This course is graded S/U.

500 Managerial Economics for Agribusiness U 4 G 4
Application of economic theory and methods to agribusiness decision making.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 200 (H200) or Agr Econ 200 (H200) or Econ 200 (H200); Econ 201 (H201) or Econ 400 (H400); and 205 or Agr Econ 205.

501 Price Analysis U 3
Forces that influence the behavior of agricultural prices; analytical techniques useful in predicting price changes or the consequences of price changes are introduced. Jones.
Au, Wi Qtrs. 2 1-hr cl, 1 2-hr lab. Prereq: Basic spreadsheet competency and Econ 501, Math 131, and one of the following: 205 or Stat 145, Agr Educ 307, Agronomy 210, Animal Sci 210.

502 Production Decision Analysis U 3
Evaluation of production and financial decision through experiments with economic models, with emphasis on computerized solution using linear programming and simulation techniques. Batte and Roe.
Wi, Sp Qtrs. 3 1-hr cl and 1 hr lab. Prereq: Basic spreadsheet competency, 401, Econ 501, and one of the following: 205, Agr Educ 307, Agronomy 210, Animal Sci 260, or Stat 145. Not open to students with credit for 450.

503 Economics of Public Policy Analysis U 3
Understanding of economic tools for analyzing public policy, including welfare economics and cost-benefit analysis, and their application to policy issues in agriculture. Sheldon and Libby.
Au, Sp Qtrs. 3 cl. Prereq: Econ 501.

510 Farm Business Management U 3
Analysis of resource control and business organization decisions that are unique to farm firms. Forster.
Wi Qtr. 3 cl. Prereq: 401.

521 Salesmanship in Agriculture U 3
Principles and techniques of selling to agribusiness buyers.
Au Qtr. 3 cl. 1 1/2 hr lab/discussion. Prereq: 402.

522 Economics of the Livestock/Meat Industry U G 3
Principles and practices involved in marketing livestock and meat: institutions and agencies concerned in pricing and product flows; industry organization and performance; public regulation; future trends. Stout.
Wi Qtr. 3 cl. Prereq: 402. Offered in cooperation with Animal Science.

523 Grain Marketing U G 3
Principles and practices involved in grain and feed marketing and the theory of grain pricing; economics of grain marketing. Larson.
Au Qtr. 3 cl.

528 Marketing Fruits and Vegetables U G 3
Principles involved in the marketing of fresh and processed fruits and vegetables and the institutions and agencies concerned in pricing and product flows from producer to consumer. Joines.
Sp Qtr. 3 cl. 1 2-day field trip.

531 Environmental and Natural Resources Economics U G 5
Economic analysis of private and public decisions regarding interactions with the natural environment. Southgate and Sishang.
Au, Sp Qtrs. 5 cl. Not open to students with credit for Nat Res 511. Cross-listed in Natural Resources.

534 Food and Fiber Economics U G 3
Economic factors affecting domestic and international specialization in food and fiber production and consumption and consequent interregional trade patterns.
Sp Qtr. 3 cl.

535 Economic Development Processes in Developing Countries U G 5
Study of major Third World problems using principles of development economics. Examines poverty, inequality, unemployment, population growth, resource use and rural development. Graham.
Wi Qtr. 3 1 1/2-hr cl. Prereq: 200 or Econ 200, but open to students with credit for Econ 650.

536 Economic Development of Sub-Saharan Africa U G 5
Issues shaping economic development and stagnation in contemporary Africa such as population growth, agricultural development, industrialization, trade, structural adjustment and environmental issues. Graham.
Sp Qtr. 3 1 1/2-hr cl. Prereq: 200 or Econ 200.

537 Middle Eastern Economic Development U G 5
Economic conditions, problems, integrations and potentials of Middle Eastern economies using principles of economic development and growth models. Examines their interrelationships with U.S. and world economy. Aly.
Sp Qtr. 2 1-hr cl. Prereq: 200 or Econ 200.

538 Latin American Economic Development U G 5
Study of economic growth, democratization, environmental conservation, funding and organizing investment in human capital and infrastructure of Latin America. Gonzalez and Southgate.
Sp Qtr. 2 2 1/2-hr cl. Prereq: 200 or Econ 200 or equiv.
541 Agricultural Cooperatives  U  G  3
Basic principles of cooperatives including types of organizations, legal aspects, membership relations, financing, organizational and interoperative problems, and distribution of savings. Hahn and Sporleder.
Sp Qtr. 3 cl. Prereq: 401 or 402.

553 Consumer and Food Economics  U  G  4
Applications of economic and statistical tools to analyze consumption behavior, demand for food and nutrition, food safety, market structure, and fast food industry. Chem.
Sp Qtr. 2 1½-hr-cl and 1 2-hr lab. Prereq: 200 or Econ 200 and knowledge of elementary statistics and basic spreadsheet competency or permission of instructor.

560 Human Resource Management in Small Businesses  U  G  3
Human resource planning, job analysis, organizational structure, recruitment and selection, training, motivation, leadership, communication, compensation, and evaluating employees in performance in context of small businesses. Erven.
Au, Sp Qtrs. 2 1½-hr cl. Prereq: 401 or Bus-MHR 500.

591 Workshop  U  G  3
Study of selected current topics in agricultural economics for teachers of vocational agriculture and extension agents.
Su Qtr. 4 2-hr cl. At least 5 crs of previous course work in agr econ or the equiv. Repeatable to a maximum of 12 crs; decimal subdivisions not repeatable.

591.01 Agricultural Business Management

591.02 Agricultural Marketing

591.03 Financial Management in Agriculture

595 Seminar in Agricultural Economics  U  1
Analysis of social and economic problems encountered by college graduates in a dynamic world.
Wi Qtr. 1 2-hr cl. Prereq: Sr standing.

597 Issues of the Contemporary World  U  5
Prereq: Sr standing. GEC/LAR course.

597.01 Problems and Policies in World Population, Food, and Environment
Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries. Hitzhusen, Graham, Gonzalez, and Tweeten.
Su, Au, Wi, Sp Qtrs. 2 1½-hr cl, 1 2-hr rec. Not open to students with credit for Int Stds 597.01. Cross-listed in International Studies.

601 Strategic Management  U  5
Case analyses of important management problems confronting agribusiness firms with a focus on long-run implications for the food system. Hahn and Sporleder.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 401, 402, 403, 501, 502, and 503; and a second writing course. Not open to students with credit for 640. GEC course.

610 Strategic Planning for the Farm Business  U  G  3
Detailed application of production economics, management principles, and decision making techniques to the organization, operation, and administration of farms; farm plans developed. Baue.
Sp Qtr. 3 cl and field trips during Qtr. Prereq: 401, Acct&MIS 201 or 211.

620 Agri-Industry Organization and Public Policy  U  G  4
Structure, conduct, performance, and public policy in agricultural industries; extensive use of analytical evidence focused on co-ops, and food manufacturing, wholesaling, and retailing. Stout.
Sp Qtr. 2 2-hr cl. Prereq: 402 and 20 additional crs in the social sciences.

622 Applied Agricultural Price Analysis  U  G  3
Regression, correlation, and time series applied to analysis of agricultural commodity prices. Thraen.
Wi Qtr. 3 cl. Prereq: 420 and Stat 133.

625 Commodity Futures and Options Markets  U  G  4
Addresses the economic function and price formation of commodity futures and options markets. Zulauf.
Sp Qtr. 2 2-hr cl. Prereq: 403 or Bus-Fin 620, sr standing or above.

631 Benefit-Cost Analysis  U  G  5
Development and illustration of key benefit-cost concepts and estimation techniques through applications to agricultural, infrastructure, natural resource, and environment projects. Hitzhusen.
Au Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: 531 or minimum of 10 hrs of economic principles or permission of instructor.

632 Agricultural Development: Theory and Empirical Evidence  U  G  4
Analysis of the agricultural and economic development process of developing countries; evaluation of theory and empirical evidence regarding the development process.
Wi Qtr. 2 2-hr cl. Prereq: 401, 402, or 403; or grad standing or permission of instructor. Not open to students with credit for 532.

670 Agricultural Law  U  G  3
Legal concerns of owning and/or managing farm and agribusiness firms as related to property ownership, finance, business organization, labor, insurance, family, and estate planning.
Sp Qtr. 3 cl. Prereq: 412 or equiv and 416 and Bus-Fin 510 or permission of instructor.

H683 Honors Project  U  1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr 590.01, enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 293, 593, H599, 693, or H693. This course is graded S/U.

693 Individual Studies  U  G  1-3
Planning, conducting, and reporting a special problem in agricultural economics.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative g.p.a. ratio, 401 or 402 or 403, or Econ 501 and written permission of instructor. Repeatable to a maximum of 6 cr hrs in any or a combination of decimal subdivisions. These courses are graded S/U.

693.01 Agribusiness Management and Finance

693.02 Agricultural Marketing and Policy

693.03 Foreign Agricultural Development

693.04 Quantitative Methods in Agricultural Economics

693.05 Resource Economics

693.06 General Agricultural Economics

693.07 Consumption and Demand

694 Group Studies  U  G  2-5
Selected topics in agricultural economics to acquaint students with current economic conditions.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 credit hours.

694.01 Agricultural Management and Finance

694.02 Agricultural Marketing and Policy

694.03 Foreign Agricultural Development

694.04 Quantitative Methods in Agricultural Economics

694.05 Resource Economics

694.06 General Agricultural Economics

694.07 Consumption and Demand

695 Farm and Agribusiness Management Seminar  U  G  2
Topics in farm and agribusiness management selected to reflect emerging problem areas and opportunities for application of analytical tools developed in previous courses. Baue and Forster.
Wi Qtr. 1 2-hr cl. Prereq: 610 or 640 or 670 or permission of instructor. Repeatable to a maximum of 4 cr hrs.

697 Study at a Foreign Institution  U  G  1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

702 Linear Economic Models  U  G  4
Linear and integer programming methods and their applications to problems in agricultural, resource, and environmental economics. Miranda.
Au Qtr. 4 cl. Prereq: Math 130 and Econ 501. Not open to students with credit for Math 634.

703 Economics of Consumption  U  G  4
Applications of economic theory to consumption analysis, new models of consumer choices, empirical studies of demand/consumption, and consumer issues in the market place. Chem.
Sp Qtr. 2 2-hr cl. Prereq: Econ 501 or equiv.

705 Economics of Agricultural Production  U  G  4
A critical consideration of economic principles as they apply to production problems in agriculture. Kraybill.
Au Qtr. 2 2-hr cl. Prereq: Economics 501 or equiv. Not open to students with credit for 605.
716 Advanced Agricultural Finance U G 4
Examination of theoretical and empirical models of agricultural finance with emphasis on firm financial decision analysis, supply of and demand for rural financial services. Forbes.
Wi Qtr. 2 2-hr cl. Prereq: 403 or Bus-Fi 620.

734 Agriculture Trade Policy U G 4
Institutions, policies, and economic theory of global agricultural trade; agricultural trade in international context of commodity program and microeconomic policies. Sheldon.
Au Qtr. 2 2-hr cl. Prereq: Econ 501 and 502 or equiv.

800 Research Methods in Agricultural Economics G 3
Principles of scientific method in agricultural economics. Randall.
Sp Qtr. 2 1 1/2-hr cl. Prereq: 703 or 705 or Econ 804 or permission of instructor.

801 Applied Methods in Agricultural Economics Modeling G 4
Application of statistics to problems in agricultural economics. Thraesa.
Au Qtr. 2 2-hr cl. Prereq: Econ 741.

802 Quantitative Methods in Agricultural Economics G 4
Applications of analytical models to problems in agricultural economics research. Miranda.
Wi Qtr. 2 2-hr cl. Prereq: 702, 800, and Econ 741.

803 Applied Demand Analysis: Food and Agricultural Markets G 4
Application of demand and consumption theory to the estimation of demand relationships and demand systems in agricultural and natural resource markets. Chem.
Wi Qtr. 2 2-hr cl. Prereq: 801 and Econ 808.

806 Economics of Agricultural Production G 4
A further consideration of economic principles as they apply to production problems in agriculture.
Wi Qtr. 2 2-hr cl. Prereq: 705 and Econ 808.

807 Project Evaluation for Public Choice G 5
Su Qtr. 3 1 1/2-hr cl. Prereq: 703 or Econ 501A.

808 Applied Welfare Economics and Policy Analysis G 4
Application of welfare economic theory and methods of problems of agriculture and natural resources. Sheldon.
Sp Qtr. 2 2-hr cl. Prereq: 803, 806, and Econ 808.

810 Agricultural Firm Management G 3
Examination of the operating and strategy problems confronting the managers of farm and nonfarm agribusiness firms, with emphasis on applying and integrating management concepts. Even.
Au Qtr. 2 2-hr hl. cl. Prereq: Econ 501 or 501A or permission of instructor.

816* Financial Markets and Rural Development G 4
Course provides conceptual framework for formulation and evaluation of financial policies in developing countries for rural and microenterprise activities. Emphasizes role of state in finance. Gonzalez.
Wi Qtr. 2 2-hr cl. Prereq: Econ 705 or permission of instructor.

820 Marketing Economics in Agriculture G 3
A critical study of contemporary problems in agricultural marketing in the U.S. and world economics with emphasis on the theoretical and policy implications. Jones.
Au Qtr. 3 cl. Prereq: 703 or Econ 501A or permission of instructor.

830 Agricultural Policy G 4
Examination of values of American society concerning agriculture, reasons for these values, and alternatives for achieving various goals for U.S. agriculture. Tweeden.
Su Qtr. 4 cl. Prereq: Econ 501 and 502.

831 Resource Economics G 3
Application of economic theory and decision making frameworks to current issues of resource use, allocation, and control. Southgate.
Wi Qtr. 3 cl. Prereq: Econ 501A or permission of instructor.

832* Seminar in Economic Development of Foreign Agriculture G 3
Characteristic problems of developing countries, identification and analysis of limiting factors in underdevelopment, and techniques for stimulating economic development through growth in agriculture. Graham.
Sp Qtr. Prereq: Econ 501 or 501A or permission of instructor. Repeatable to a maximum of 8 cr hrs.

833* Economic Development Theory and Policy G 4
Applied development economics course with emphasis on policy formulation and evaluation; shows the power of economic theory for analysis of policies, markets and institutions. Gonzalez.
Wi Qtr. 2 2-hr cl. Prereq: Econ 605, Econ 705 or permission of instructor. Not open to students with credit for Econ 850.

834* Political Economy of Trade, Development and Agricultural Policies G 4
Analysis of policy making process of trade, development, and agricultural support policies in the food sector and its impact on economic welfare. Examines rent-seeking behavior. Gonzalez and Sheldon.
Sp Qtr. 2 2-hr cl. Prereq: 734 or Econ 665, and Econ 501; or permission of instructor.

840* Regional Economic Growth: Theory and Measurement G 4
Theories of economic growth and development at the sub-national level. Problems of rural regions are highlighted. Krabill.
Wi Qtr. 2 2-hr cl. Prereq: Geog 655 or permission of instructor.

902* Computed General Equilibrium Analysis G 4
Application of computable general equilibrium methods to analyze allocative and distributional effects of economic policies. Krabill.
Sp Qtr. 2 2-hr cl. Prereq: 703 and 705 or Econ 804 and 805.

934 Advanced International Trade in Food and Agriculture G 4
Synthesis of trade theory with industrial organization analysis and applications to the food and agricultural sector. Sheldon.
Au Qtr. 2 2-hr cl. Prereq: Econ 808 or 861 or permission of instructor.

993 Individual Studies G 2-5
Planning, conducting, and reporting a special problem in agricultural economics fitting the needs of the student, under the guidance of an instructor.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs in any or a combination of decimal subdivisions. These courses are graded S/U.

995 Seminar G 2-4
Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

999 Research in Agricultural Economics G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Agriculture: Interdisciplinary

100 Agricultural Administration Building, 2120 Fyffe Road, 292-6991

100 Agriculture Survey U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of agriculture academic areas of study and services. Su, Au Wi, Sp Qtrs. 2 cl. H100 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 101, Arts Col 100, Arts & Sci 100, Engrs 100, Home Ec 100, Nat Res 100, or UVC 100 or H101.

294 Group Studies U 1-5
Group study classes or projects in selected interdisciplinary topics in Agriculture. Su, Au, Wi, Sp Qtrs. Arr.

351 Agricultural Employment U 1
Discussion of personal career objectives in agriculture and conducting an effective employment campaign through resumes, cover letters, interviewing, and job offer evaluation. Miller.
Au, Wi Qtrs. 1 cl.

H590 Agriculture Honors Colloquium U 1
1 cl.
H590.01 Research
Preparation of honors programs, design of honors research projects, and writing of research proposals.
Au Qtr. 1 cl. Prereq: Enrollment in AGR honors program and/or standing or permission of instructor.
203 The Evolution of USAF Air and Space Power from 1970's through 2025 U 1
The role of US air power during the post-Vietnam era through 2025 with emphasis on regional conflicts and growing technological sophistication.
Sp Qtr. 1 cl, 2 lab hrs.

Professional Officer Course Juniors, Seniors, and Graduate Students

301 Air Force Leadership and Management U 3
Roles and responsibilities of Air Force officers; topics include leadership (principles, styles, and responsibilities), management, training, philosophy, conflict management, problem solving, and oral communications.
Au Qtr. 3 cl, 2 lab hrs. Prereq: Completion of AFROTC Field Training or permission of instructor.

302 Leadership Concepts and Quality Air Force U 3
Leadership concepts, including counseling, motivation, delegation, supervision, empowerment, mentoring, officerliness, quality Air Force philosophy, concepts, techniques, tools of quality management (improvement, process action teams, measurement tools).
Wi Qtr. 3 cl, 2 lab hrs. Prereq: 301 or permission of instructor.

303 Officer Development and Communication Techniques U 3
Officer and enlisted evaluation systems, Air Force personnel system, ethics, advanced military topics, written and oral communications, emphasis on supervision of enlisted personnel; feedback, assessment, enlisted evaluation reports.
Sp Qtr. 3 cl, 2 lab hrs. Prereq: 302 or permission of instructor.

401 National Security and the Strategy Making Process U 3
The roles of the Executive branch, Congress, and military in the national security process; exploration of the organization and the role of the Air Force.
Au Qtr. 3 cl, 2 lab hrs. Prereq: 303 or permission of instructor.

402 Joint Military Operations and Area Studies U 3
An investigation into the other military services and joint military operations; progresses into a study of US interests in regions around the world.
Wi Qtr. 3 cl, 2 lab hrs. Prereq: 401 or permission of instructor.

403 Preparation for Active Duty U 3
Preparation for active duty as an Air Force officer.
Sp Qtr. 3 cl, 2 lab hrs. Prereq: 402 or permission of instructor.

Allied Medicine

School of Allied Medical Professions
127 School of Allied Medical Professions Building, 1583 Perry Street, 292-5618

419 Electronic Principles in Medical Instrumentation U 5
The use of electronic components, circuits, operational amplifiers, and differential amplifiers in medical instrumentation. (Challjee)
Au Qtr. 3 cl, 2 2-hr labs. Prereq: Physics 112 Math 152, and permission of instructor.

425 Critical Phases in Life I U 3
An examination of human's development from conception to death and factors critical to continuing health.
Sp Qtr. 3 cl. Prereq: Biology 110 or equiv, and 5 hrs psych.

500 Medical Terminology U 3
Terminology pertaining to the treatment of disease, including standard abbreviations, anatomic, diagnostic, symptomatic, eponymic, laboratory, pathologic, radiologic, anesthetic, operative, and drug terms.
Au, Wi, Sp Qtrs. 3 cl. Not open to students with credit for 500.01 or 500.02. Cross-listed in Health Information Management and Systems.

505 Principles of Disease I U 3
Basic pathophysiology and its application to the organs systems.
Au Qtr. 3 cl. Prereq: Admission to the School of Allied Medical Professions and Physiol 312 or Zoology 232, or permission of instructor.

506 Principles of Disease II U 3
A continuation of 505.
Wi Qtr. 3 cl. Prereq: 505.

520 Musculoskeletal Disease U G 2-3
Principles, clinical aspects, and therapeutic procedures related to diseases of the musculoskeletal system.
Sp Qtr. 2-3 cl. Prereq: Admission to the School of Allied Medical Professions or written permission of instructor.
530 Neurornuscular Disease U G 3
Survey of injury and disease of the central, peripheral, and autonomic nervous systems; presentation of clinical material.
Wi Qtr. 3 cl. Prereq: Permission of instructor.

555 Coping with Terminal Illness and Death U 3
An exploration of the psycho-social needs of the dying, alternative approaches to meeting those needs, and the impact of the attitudes attending health professions.
Au, Wi Qtr. 1-1/2 hr cl. Prereq: Permission of instructor, 4th yr standing, or health profession credential.

591 Health Care Organization U 3
An examination of the roles of public and private organizations in planning and supporting health care, including study of health trends, social legislation, and current professional issues.
Wi Qtr. 3 cl. Prereq: Enrollment in AMP or NUR or permission of instructor.

610 The Hospital as an Educational Institution U G 3
Hospital as a clinical learning environment for medical and allied medical professionals; in-service education; patient and community health education; continuing education.
Sp Qtr. 3 cl. Prereq: Permission of instructor.

612 Managing the Health Care Training Function at the Departmental Level U G 3
The techniques of in-service training programs; discussion and analysis of the role and function of the training manager.
Wi Qtr. 1 1/2 hr cl. Prereq: Sr or grad standing in allied med or health-related major, Jr or Sr med comm major.

627 Management of Patient Education Systems U G 3
Planning, organizing, and evaluating patient education systems and programs in health care organizations.
Au Qtr. 1 1/2 hr cl. Prereq: Sr. or Grad standing in Allied Med or Health related major.

630 Management of Hospital Departments U P G 3
An analysis of the management process and its application to the hospital setting.
Au, Sp Qtrs. 3 cl. Prereq: Enrollment in AMP or permission of instructor.

640 Health Promotion and Disease Prevention in Acute Care Organizations U G 3
Programs in acute care institutions are examined as a means of marketing services, reducing health care costs and changing the roles of allied health practitioners.
Sp Qtr. 1 1/2 hr cl. Prereq: Sr or grad standing in allied health or a related major.

648 Microcomputer Applications in the Health Sciences U G 3
Overview of microcomputer applications in health sciences with practical applications related to discipline specific needs.
Au, Wi, Sp Qtrs. 2 hr cl. Computer programming neither required nor taught. Cross-listed in Health Information Management and Systems.

650 Health Care Information Systems U G 3
Survey of patient, administrative and financial information systems in health care, and the technologies and management practices to support them.
Sp Qtr. 2 1/2 cl. Cross-listed in Health Information Management and Systems.

654 Computer-Based Health Information Systems, Planning and Analysis U G 3
Focus on: structured systems analysis techniques including database design for health information systems.
Wi Qtr. 3 cl. Prereq: 648, 650 or permission of instructor. Cross-listed in Health Information Management and Systems.

655 Understanding the Aging Process P G 3
Study of physical and mental health components of normal aging with emphasis on critical components of successful aging, presented as basis for delivery of health services.
Sp Qtr. 2 1/2 hr cl.

680 Research Design in Biomedical Sciences
680.01 Research Design in Biomedical Sciences U 3
Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports.
Au, Wi Qtrs. 2 1/2 hr cl. H880.01 honors may be available to students enrolled in an honors program in allied health or by permission of dept. Prereq for H880.01: Eligible for honors program in allied health.

680.02 Research Design in Biomedical Sciences G 3
Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports.
Wi Qtr. 1 1/2 hr cl. Prereq: Grad standing in allied health, pathology, or related field. The design of experiments and statistical concepts are further developed in Stat 528, 529, 530, 641, 645, 661, and Biostat 615.

693 Individual Studies U G 1-5
Guided study of selected topics.
Au, Su, Wi, Sp Qtrs. 1-5 cl. H693 (honors) may be available to students enrolled in an honors program and/or by permission of a division within the school. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Supervised group studies of special topics within the various professions of the allied health field.
Au, Su, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

700 Interprofessional Education
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.
3 cl. Repeatable to a maximum of 6 cr hrs. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology (Columbus Seminaries).

700.01 Interprofessional Care U G 3
Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.
Wi Qtr.

700.02 Changing Societal Values U G 3
Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.
Sp Qtr. (even numbered years only)

700.03 Ethical Issues U G 3
Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, social responsibility of the professions.
Au Qtr.

700.04 Interprofessional Seminar in Clinical Practice U G 3 or 5
Interprofessional teamwork in clinical settings.
Wi Qtr. Arr. Prereq: Permission of instructor.

700.05 Interprofessional Seminar in Policy Analysis U G 3
Interprofessional exploration of the history, formation, and implementation of public policy issues of significance to seven helping professions.
Wi Qtr. Prereq: Sr standing or permission of instructor.

700.06 Care of Chemically Dependent Families U G 3
Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.
Wi Qtr. Prereq: Permission of instructor. This course is graded S/U (even numbered years only)

700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3
Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.
Au Qtr. 1 1/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, aw, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities.

717.01 Family Systems: An Interdisciplinary Approach to Families and Handicapped Children
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
Wi Qtr. 3 hr cl. Not open to students with credit in 717.01 in any of the cross-listed areas. Limit of 20 students.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues
Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.
Su Qtr. 1 2-hr cl. Not open to students with credit in 717.02 in any of the cross-listed areas. Limit of 20 students.
Animal Sciences

110 Animal Science Building, 2029 Pylle Road, 292-6401

161 Horseback Riding U 1
Basic skills of equitation and an understanding of safety. Subdivided based on skill.
1 3-hr lab. Not available for major credit. Students must have medical insurance and pay a stable fee. Travel to barn is at own expense. Cross-listed in Health, Physical Education, and Recreation.
161.01 Beginning Equitation
Basic principles of riding and safety with horses.
Su, Au, Wi, Sp Qtrs. Not open to students with credit for Animl Sc 161.01 or HPER 161.01.
161.02 Equitation - Level 2
Advancement in equitation skills and care for the riding horse.
Su, Au, Wi, Sp Qtrs. Prereq: 161.01 or a riding test. Not open to students with credit for Animl Sc 161.02 or HPER 161.02.
161.03 Equitation - Level 3
Fine tuning of equitation skills in patterns and learning the proper use of bits and training aids.
Su, Au, Wi, Sp Qtrs. Prereq: 161.02 or a riding test. Not open to students with credit for Animl Sc 161.03 or HPER 161.03.

200 Introductory Animal Sciences U 5
Role, current organization, history, and characteristics of the animal industries in the world. Day, Ottobre, Turner.
Au, Wi, Sp Qtrs. 4 cl. 1 2-hr lab. Not open to students with credit for Animl Sc 202, Dairy Sc 202, or Pfrty Sc 202.

201 Fundamentals of the Horse Industry U 5
Uses of the horse, the economic impact on society, and the basic science of equine nutrition, reproduction, genetics, disease control, housing, and general management. Kline.
Au Qtr. 3 cl. 1 3-hr lab. Not open to students with credit for Animl Sc 241.

206 Introduction to Aviculture U 3
Provides a basic understanding about the selection, care, and feeding of pet birds in captivity. Latshaw.
Sp Qtr. 3 cl. Prereq: Biology 101 or 113. Not open to students with credit for Pfrty Sc 301.

207 Dairy Cattle Evaluation U 3
Use of functional type traits in evaluation and selection of dairy cattle. Spike.
Sp Qtr. 1 2-hr lab and 1 3-hr lab. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pfrty Sc 202 and soph standing. Not open to students with credit for Dairy Sc 207. Off campus field exp: 1 2-day field trip to dairy herds in the state plus 3-4 class periods.

260 Data Analysis and Interpretation for Decision Making U 5
Basic concepts of probability and statistics applied to the interpretation of quantitative data. Davis and St. Martin.
Au, Wi Qtrs. 4 cl. 1 2-hr rec/lab. Prereq: Math 130 or 148. Not open to students with credit for Animl Sc 210, Agr Econ 205, Agr Educ 387, Agronomy 210, HS&CS 260, Stat 125, 135, 145. Cross-listed in Horticulture and Crop Science. GE course.

271 Equine Behavior, Conditioning, and Farriery Science U 4
Understanding behavior and physiology of conditioning of the horse and using that knowledge to produce humane training methods; practical experience in farriery science. Kline.
Au, Wi Qtrs. 5 2-2-hr labs. Prereq: Permission of instructor. Limited to ten students. Not available for major credit. Not open to students with credit for Animl Sc 382. Students must have medical insurance and will pay a stable fee for the course.

290 Creating a Career in Animal Sciences U 1
Exploration of career opportunities; discussion by guest professionals. Almaher.
Sp Qtr. Prereq: Soph standing. Not open to students with credit for Dairy Sc 359.02. This course is graded S/U.

300 Livestock Selection and Evaluation U 4
Laboratory exercises employing current standards of animal excellence including carcass value for the selection and improvement of farm livestock. Turner.
Wi Qtr. 4 2-hr lab-discussions. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pfrty Sc 202, and jr standing. Not open to students with credit for Animl Sc 500.

301 Equine Selection and Evaluation U 3
Understanding the relationship of form to function; evaluating conformation and performance, and orally defending that evaluation. For: Pfrty Sc 302 2-hr labs. Prereq: 200 or 201 or Animl Sc 202 or Dairy Sc 202 or Pfrty Sc 202. Not open to students with credit for Animl Sc 300. The student will pay a lab fee.
305 Meat Animal and Carcasses Evaluation U 3
The factors that influence the value of meat animals, carcasses, and wholesale cuts in accordance with recognized grading standards; laboratory practice.
Wi Qtr. 3 2-hr labs. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pttry Sc 202. Not open to students with credit for Animl Sc 464.

306 Fundamentals of Poultry Science U 5
Application of science and technology in the poultry and related industries. Latshaw.
Sp Qtrs. 4 cl, 1-1 hr lab, 1 hr arriv. Prereq: 200 Animl Sc 202 or Dairy Sc 202 or Pttry Sc 202 or Biology 113. Not open to students with credit for Pttry Sc 200 or 300. This course is available for EM credit.

310 Principles of Animal Systems Physiology U 5
Introductory course that surveys organ/systems within the body and relates the functional physiology of those systems to animal production. Pope.
Wi, Sp Qtrs. 5 1-hr cl. Prereq: Biology 101 or 113, and Chem 101 or 121. Not open to students with credit for Animl Sc 310, Dairy Sc 310 or Pttry Sc 310, BERGECULAR course.

317 Milk Secretion U 3
Introduction to mammary gland anatomy, milk synthesis, and factors affecting mammary health. Hogan.
Sp Qtr. 2 1/2 hr-cl. Prereq: Biology 101 or 113. Not open to students with credit for Dairy Sc 313.

320 Principles of Genetic Improvement U 5
An introduction to the methods available for bringing about genetic change in farm animals. Davis and Irvin.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pttry Sc 202, and 200 or Animl Sc 210 or Agr Econ 205 or Agr Educ 387 or Agronomy 210 or Stat 145, and Biology 113. Not open to students with credit for Animl Sc 450, Dairy Sc 450, or Pttry Sc 450.

330 Principles of Animal Nutrition U 5
A study of the fundamental principles of nutrition in mammals and birds. Firkins and Latshaw.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Pttry Sc 202 or Nat Res 200, and Biology 113. Not open to students with credit for Animl Sc 450, Dairy Sc 450 or Pttry Sc 450.

331 Practical Horse Feeding U 4
Nutritional needs of the horse; significance of supplements and feeds as they relate to the horse's nutrition and health. Porr.
Sp Qtr. 4 cl. Not available for major credit. Not open to students with credit for Animl Sc, Dairy Sc, Pttry Sc 430 or Animl Sc 380 or 632.

341 Equine Farm Operation and Marketing U 4
Designing a horse operation; using computer programs for horse farm management; developing promotion, and sales strategies; conducting an auction sale. Southworth.
Wi Qtr. 2 1-hr cl, 2 2-hr labs. Prereq: 201 or Animl Sc 241 and permission of instructor. Limited to 20 students. Not available for major credit. Not open to students with credit for Animl Sc 381.

355 Meat Science U 3
355.01 Principles of Meat Science
Analysis of the principles of meat science as related to meat animal value factors, processing technology, and merchandising systems affecting the producer, processor, and consumer. Wikl.
Au, Wi, Qtrs. 3 cl. Prereq: 5 or chrs in Animal Sciences or Animal Science. Not open to students with credit for Animl Sc 452.
355.02 Meat Science Products Laboratory
Procedures and value factors involved in meat animal harvest, carcass evaluation, fresh meat processing, cured/processed meat production, and retail merchandising.
Au, Wi, Qtrs. 3 2-hr labs. Prereq or concur: 355.01 or Animl Sc 452. Not open to students with credit for Animl Sc 453.

360 Global Food and Agriculture U 5
The integration of food, agriculture, environment, resources, technology, culture and trade on a global scale. Cockerman.
Wi Qtr. 3 1 1/2-hr cl. Not open to students with credit for Animl Sc 375.

400 Animal Growth and Development U 4
Evaluation of biological processes which contribute to prenatal and postnatal growth of meat animals. Mahan.
Au Qtr. 4 cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pttry Sc 310 or 320 or Animl Sc 420 or Dairy Sc 420 or Pttry Sc 420 or 330 or Animl Sc 430 or Dairy Sc 490 or Pttry Sc 430. Not open to students with credit for Animl Sc 490.

410 Application of Reproductive Management to Livestock U 4
A practical introduction to the various tools and techniques available to improve the reproductive performance of livestock. Pope.
Wi Qtr. 4 cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pttry Sc 310 or permission of instructor. Not open to students with credit for Animl Sc 412 or Dairy Sc 412.

430 Feeds and Feeding U 5
Evaluation of feedstuffs used and dietary formulations for swine, poultry, sheep, beef, and dairy; practical feeding programs for each species will be presented. Loerch and Mahan.
Sp Qtr. 4 1-hr cl, 1 1/2 hr recitation, 1-day field trip. Prereq: 330 or Animl Sc 490 or Dairy Sc 430 or Pttry Sc 430. Not open to students with credit for Animl Sc 451, Dairy Sc 431, or Pttry Sc 431.

447 Dairy Herd Management U 5
Application of scientific principles to practical herd management, analyses of alternatives and decision making. Spike.
Wi Qtr. 3 cl, 2 2-hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pttry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pttry Sc 420 or 330 or Animl Sc 430 or Dairy Sc 430 or Pttry Sc 430. Not open to students with credit for Dairy Sc 440.

489 Internship in Animal Science U 1-6
Supervised preplanned employment experience and/or on-site problem solving study program with approved animal production industry or research enterprise; written comprehensive report required.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 or chrs in Animal Sciences or Animal Science. Open only to dept majors. Repealable to a maximum of 10 hrs credit in Pttry Sc 389, Animl Sc 489, and Animal/Sciences 489. This course is graded S/U.

494 Group Studies U 3-5
Special topic area group studies formally proposed for a specific quarter by an animal science faculty member.

522* Genetic Improvement of Beef Cattle U G 3
Use of genetic principles to develop breeding plans for selection of seedstock herds for economic traits and their utilization in commercial production. Turner.
Wi Qtr. 3 cl. Prereq: 320 or Animl Sc 420 or Dairy Sc 420 or Pttry Sc 420. Not open to students with credit for Animl Sc 522.

523 Genetic Improvement of Swine U G 3
Application of genetic principles for swine improvement; selection, mating, testing for predicting genetic value, and use of data in decision-making criteria for economically important characteristics. Irvin.
Sp Qtr. 3 cl. Prereq: 320 or Animl Sc 420 or Dairy Sc 420 or Pttry Sc 420. Not open to students with credit for Animl Sc 523.

530 Comparative Animal Nutrition U 5
Advanced principles of animal nutrition. Firkins and Latshaw.
Wi Qtr. 5 cl. Prereq: 300 or Animl Sc 430 or Dairy Sc 430 or Pttry Sc 430, jr standing, and second writing course. Not open to students with credit for Animl Sc 530, Dairy Sc 530 or Pttry Sc 530. GEC course.

540 Feedlot Management U G 3
The impact of nutrition, growth and development, economics, and desired carcass characteristics on the management of feedlot animals. Fluharty.
Sp Qtr. 2 1 1/2 hr-cl. Prereq: 310, 320, and 330 or permission of instructor.

541 Equine Production U G 5
The application of scientific principles to the production of horses. Includes farm design, reproductive management, genetics, nutrition, health, marketing and behavior of the horse. Kline.
Sp Qtr. 3 1-hr cl, 2 2-hr labs. Prereq: 200 or 201 or Animl Sc 202 or Dairy Sc 202 or Pttry Sc 202 or Animl Sc 241, and 331 or Animl Sc 380 or 330 or Animl Sc 430 or Dairy Sc 430 or Pttry Sc 430. Not open to students with credit for Animl Sc 541.

542 Beef Cattle Production and Management U G 5
The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of beef cattle. Day.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pttry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pttry Sc 420 or 330 or Animl Sc 430 or Dairy Sc 430 or Pttry Sc 430. Not open to students with credit for Animl Sc 542.

543 Swine Production U G 5
The application of science and basic principles of nutrition, physiology, genetics, health, economics, meats, and housing in integrated management systems for modern swine production. Moeller.
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Pttry Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Pttry Sc 420 or 330 or Animl Sc 430 or Dairy Sc 430 or Pttry Sc 430. Not open to students with credit for Animl Sc 543.
544 Sheep Production and Management U G 5
The application of science and basic principles of nutrition, genetics, physiology, and marketing to the production and management of sheep.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Ptryr for Sc 510 and 190 or Animl Sc 420 or Dairy Sc 420 or Ptryr Sc 420 and 336 or Animl Sc 430 or Dairy Sc 430 or Ptryr Sc 430. Not open to students with credit for Animl Sc 544.

548 Commercial Poultry Management U G 5
A study of commercial poultry management utilizing an enterprise approach. Mulr.
Sp Qtr. 4 cl, 1-2 hr lab. Prereq: 200 or Animl Sc 202 or Dairy Sc 202 or Ptryr Sc 202 and 310 or Animl Sc 310 or Dairy Sc 310 or Ptryr Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Ptryr Sc 420 and 336 or Animl Sc 430 or Dairy Sc 430 or Ptryr Sc 430, or Avian Biology minor, and 1 standing. Not open to students with credit for Ptryr Sc 546.

550 Meat Processing U G 4
Fundamental changes in soft animal tissues resulting from comminution and application of chemicals and heat. Knipe.
Au Qtr. 2 cl, 2-2 hr labs. Prereq: 355.01 or Animl Sc 452. Not open to students with credit for Animl Sc 550.

593 Individual Studies U G 2-5
Special assignments and elementary research; problems assigned after consultation with instructor in charge.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cl hrs in Animl Sc 593, Animl Sc 593, Dairy Sc 593, and Ptryr Sc 593. This course is graded S/U.

600 Capstone Course In Animal Sciences U 5
Relationship of the animal sciences to the emerging and continuing issues facing society. Allaire and Irvin.
Wi, Sp Qtrs. 3-2 hr cl. Prereq: 447 or 542 or 543 or 544 or 546 or 647 or Ptryr Sc 440 or Ptryr Sc 541 or Dairy Sc 560 and second writing course. Not open to students with credit for Animl Sc 560. Not open to freshmen or sophomores. GEC course.

610 Physiology of Reproduction U G 5
Physiology and endocrinology of the reproductive systems; examination of basic mechanisms governing reproduction in various species. Ottobre and Pate.
Wi, Sp Qtrs. 3 cl, 1 hr recitation, 1-2 hr lab. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Ptryr Sc 310 and second writing course. Not open to students with credit for Animl Sc 510 or Dairy Sc 510. GEC course.

615 Poultry Physiology U G 5
An organ course in avian physiology with particular emphasis on adaptation to modern production systems, animal care, growth, and reproduction. Bacon.
Sp Qtr. 4 cl, 1 hr recitation, 1-3 hr lab. Prereq: 310. Not open to students with credit for Ptryr Sc 614.

617 Physiology of Lactation U G 3
The physiological, endocrine, nutritional, and environmental factors influencing the synthesis and ejection of milk. Schanbacher.
Au Qtr. 2-1 hr cl, 1 hr seminar. Prereq: 20 cl hrs Animal Science, Dairy Science or vertebrate biology. Not open to students with credit for Animl Sc 616 or Dairy Sc 610.

618 Molecular Events in Tissue Growth and Development U G 4
A molecular developmental approach to the study of tissue growth, structure, and function in animals and humans. Velleman.
Sp Qtr. 2-2 hr cl. Prereq: 310, or Animl Sc/Dairy Sc/Ptryr Sc 310, and Biochem 511 or permission of instructor.

620 Applied Animal Molecular Genetics U G 4
Provide understanding of molecular genetic tools currently used in animal health and improvement programs. Wick and Hines.
Sp Qtr. 2-1 hr cl. Prereq: 326, Biochem 511, Mol Gen 500, or permission of instructor.

643 Advanced Swine Production Science U G 5
Integration of swine production advances and their application to modern swine service systems; swine literature will be evaluated. Moeller, Irvin and Meeker.
Sp Qtr. 3-2 hr cl. Prereq: 543 or Animl Sc 543 or permission of instructor. Not open to students with credit for Animl Sc 563.

647 Evaluation and Integration of Research for Dairy Operations U G 5
Integration of scientific principles to maximize efficiency in dairy farm operations. Spike.
Sp Qtr. 5 cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Ptryr Sc 310 and 320 or Animl Sc 420 or Dairy Sc 420 or Ptryr Sc 420 and 336 or Animl Sc 430 or Dairy Sc 430 or Ptryr Sc 430. Not open to students with credit for Dairy Sc 640. Off campus field exp: 2-1 day field trips to establish dairy operations.

650 Advanced Meat Technology U G 3
Evaluation of scientific contribution to meat products and processing. Ockerman.
Sp Qtr. 2 cl, 1-2 hr labs. Prereq: 15 cl hrs chem, 5 cl hrs microbiol, and 5 cl hrs anatomy. Not open to students with credit for Animl Sc 650.

655 Laboratory Analysis of Meat Products U G 5
Analysis of meat products by physical, chemical, and microbiological techniques. Ockerman.
Wi Qtr. 2 cl, 2-1 hr labs, 4 hrs arr. Prereq: 356.01 and 355.02 or Animl Sc 452 and 453 or permission of instructor, 10 cl hrs chem and 5 cl hrs microbiol. Not open to students with credit for Animl Sc 651.

666* Egg and Poultry Products Technology U G 5
Physical, chemical, and microbiological properties of eggs and poultry, and relationship of these properties to processing methods, product quality, and utilization.
Au Qtr. 3 cl, 2-2 hr labs. Prereq: Chem 102 or 122, Microbiol 509 or 520, and second writing course. Not open to students with credit for Ptryr Sc 650. GEC course.

668* Quality Control Interpretation U G 3
Sampling, statistical plotting, and chart interpretation using examples drawn from the food area. Ockerman.
Sp Qtr. 3 cl. Not open to students with credit for Animl Sc 654.

670 Systemic Approaches to the Management of Animal Production Units U 5
Management and learning with a systems thinking perspective is emphasized. Decision making and problem solving is accomplished by integrating scientific, economic, and societal factors. Allaire.
Su, Au, Wi, Sp Qtrs. 3-2 hr cl. Prereq: 260 or Agronomy 210 or Animl Sc 210 or Ag Econ 205 or Agr Educ 387 or Stat 145 or Nat Res 222 and 200 or Animl Sc 202 or Dairy Sc 222 or Ptryr Sc 202 and second writing course or permission of instructor. Not open to students with credit for Dairy Sc 650. GEC course.

676* Prevention and Control of Avian Diseases U G 5
The etiology, recognition, prevention, and control of the important diseases of poultry and game birds. Morah..
Wi Qtr. 3 cl, 2-2 hr labs. Prereq: Chem 102 or 122 and Microbiol 509 or 520. Not open to students with credit for Ptryr Sc 643.

6853 Honors Projects U 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr Int H500.01, enrollment in honors program, and permission of honors supervisor. Repeatable to a maximum of 10 cl hrs as H585 or in combination with 293, 392, H593, H693, or H695. This course is graded S/U.

693 Individual Studies U G 3-5
Special assignments and advanced research; problems assigned after consultation with the instructor in charge.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 15 cl hrs in Animal Sci 693, Animl Sc 693, Dairy Sc 693, and Ptryr Sc 693. This course is graded S/U.

694 Group Studies U G 3-5
Special assignments and advanced research; problems assigned after consultation with the instructor in charge.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

710* Advanced Reproductive Physiology U G 4
Recent advances in research in mammalian reproduction. Ottobre.
Sp Qtr. 2-2 hr cl. Prereq: 610 or Animl Sc 612 or Dairy Sc 612 and acceptable courses in physiol, endocrin, and biochem. Not open to students with credit for Animl Sc 710 or Dairy Sc 710.

720 Animal Genetics U G 3
720.01* Genetics of Animal Populations I
Parameters of static populations, genetic arrays and equilibria, and statistical measures; partitioning the phenotypic variance mutation, migration, selection, and change. Irvin.
Au Qtr. 3 cl. Prereq: 320 or Animl Sc 420 or Dairy Sc 420 or Ptryr Sc 420 or Mol Gen 500, and Mol Gen 650 or equiv. Not open to students with credit for Animl Sc 721, Dairy Sc 721, or Ptryr Sc 721.
720.02* Genetics of Animal Population II
Selection for polygenetic characters, mating systems, and development of breeding plans. Irwin.
Au Qtr. 3 cl. Prereq: 720.01 or Animl Sc 721 or Dairy Sc 721 or Ptry Sc 721. Not open to students with credit for Animl Sc 722, Dairy Sc 722, or Ptry Sc 722.

730 Animal Physiology and Nutrition
730.01 Ruminant Physiology, Nutrition, and Metabolism G 3
Study of physiology and nutrient metabolism of ruminants; microbial metabolism and fermentative processes will be discussed. Loesch and Palmquist.
Wi Qtr. 2 1/2-hr cl. Prereq: 310 or Animl Sc 310 or Dairy Sc 310 or Ptry Sc 310, and 330 or Animl Sc 430 or Dairy Sc 430 or Ptry Sc 430, and Biochem 511 or permission of instructor. Not open to students with credit for Animl Sc 731 or Dairy Sc 731.

730.02 Research Techniques in Animal Nutrition G 3
Practical exposure to the techniques involved in ruminant and nonruminant research. Firkus.
Au Qtr. 2 3-hr lab. Prereq: 330 or Animl Sc 430 or Dairy Sc 430 or Ptry Sc 430 and Biochem 511, or permission of instructor. Not open to students with credit for Animl Sc 732 or Dairy Sc 732.

730.04* Nutrition in the Support of Reproduction U G 3
A functional approach to the study of nutrition for support of reproduction in animals and humans. Day and Latshaw.
Sp Qtr. 3 cl. Prereq: 410 or 610 or Animl Sc 412 or Dairy Sc 412 or Animl Sc 810 or Dairy Sc 815; 330 or Animl Sc 430 or Dairy Sc 430 or Ptry Sc 430 and Biochem 511. Not open to students with credit for Animl Sc 734, Dairy Sc 734, or Ptry Sc 734.

740 Principles of Toxicology I G 3
Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.
Wi Qtr. 3 cl. Prereq: Biochem 613 or equiv, Physiol 312 or equiv. Not open to students with credit for Pharmacy 740 or Vet Bios 740. Cross-listed in Pharmacy and Veterinary Biosciences.

741 Principles of Toxicology II G 3
Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.
Sp Qtr. 5 cl. Prereq: 740 or Pharmacy 740 or Vet Bios 740; Biochem 511 or equiv, Physiol 602 or equiv. Not open to students with credit for Pharmacy 741 or Vet Bios 741. Cross-listed in Pharmacy and Veterinary Biosciences.

810 Advances in Physiology of Domestic Animals G 5
Au, Wi, Sp Qtrs. 1 4-hr cl. Prereq: Written permission of instructor, acceptable courses in physiology, cbin&anat and biochem. Not open to students with credit for Animl, Dairy or Ptry Sc 810.

810.01* Anterior Pituitary Function
Bacon.
Au Qtr.

810.02* Endocrinology of Reproduction
Wi Qtr. Pate.

810.03 Immunology and Immunogenetics
Hines.
Sp Qtr.

810.04 Molecular Endocrinology
Combined lecture/laboratory course on the molecular and cellular basis of hormone action and state-of-the-art methodologies in molecular endocrinology.
Sp Qtr. Prereq: Biochem 511 or equiv and permission of instructor.

810.05* Mammalian Germ Cells
Sp Qtr. Pope.

820 Advanced Studies in Animal Genetics G 3
3 cl. Prereq: Acceptable courses in animal genetics, math, and statistics. Not open to students with credit for Animl, Dairy or Ptry Sc 820. Repeatable to a maximum of 12 cr hrs.

820.02* Research Methods in Animal Genetics I
Davis.
Wi Qtr.

820.04* Research Methods in Animal Genetics II
Allaire and Davis.
Wi Qtr. Prereq: 820.02.

830 Advanced Studies in Nutrition G 3
Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 530 or Animl Sc 530 or Dairy Sc 530 or Ptry Sc 530 or Humm Ntr 610; Fd Sc&Te 761 and 762; 10 grad or hrs in physiol. Not open to students with credit for Animl, Dairy, Ptry Sc 830 or Fd Sc&Te 830 or Humm Ntr 830; Cross-listed in Food Science and Technology, and Human Nutrition and Food Management.

830.01* Energy
Latahay, Painquilt, and Snook.
Sp Qtr.

830.02* Minerals
Mahan.
Au Qtr.

830.03* Proteins and Amino Acids
Liburn.
Wi Qtr.

830.04* Vitamins
Liburn.
Wi Qtr.

830.05* Lipids
Alfred.
Sp Qtr.

830.07* Rumen Microbiology
Dehority.
Su Qtr. This course is not available in human or Ptry sc.

830.08* Carbohydrates
Snook.
Au Qtr.

850 Food in International Agriculture G 3 or 5
* A study of international food production, processing, and utilization. Ockerman.
Su Qtr. 5 cl. 1 1/2 hr lab. Not open to students with credit for Animl Sc 856. Repeatable to a maximum of 5 cr hrs.

860 Scientific Philosophy and the Work of Scientists G 3
Historical and future perspectives of research in the animal sciences, role of theory and evidence in developing scientific knowledge, and presentations of reports. Allaire.
Su Qtr. 2 1/2-hr cl. Prereq: Completed 30 cr hrs in grad studies, introductory statistics course. Not open to students with credit for Dairy Sc 868.

880* Molecular Biology Techniques G 4
Combined lecture/laboratory in the techniques of nucleic acid isolation, analysis, hybridization, sequencing, cloning, expression, and associated biotechnologies. Wick and Courtney.
Su Qtr. 10 2-hr cl. Prereq: Biochem 521 or 613 or equiv. Not open to students with credit for Animl Sc 850, Dairy Sc 850 or Ptry Sc 850.

890 Seminar G 1
Discussions of current animal science research.
Su, Au, Wi, Sp Qtrs. 1 1-hr cl. Prereq: Grad standing Animal Sciences or permission of instructor. Students may not register for more than 10 cr hrs under this number. All seminars are graded S/U.

890.01 General Seminar
Au, Wi, Sp Qtrs.

890.02 Nutrition
Sp Qtr.

890.03 Physiology
Sp Qtr.

890.04 Genetics
Sp Qtr.

890.05 Quality and Safety of Animal Products
Sp Qtrs.

890.06 Interdisciplinary
Sp Qtr.

898 Interdepartmental Seminar in Nutrition G 1
A seminar in nutrition and in related fields of food technology. Sc&Te. Not open to students with credit forAniml, Dairy, Ptry Sc 898 or Fd Sc&Te 898. Cross-listed in Food Science and Technology. This course is graded S/U.

993 Individual Studies G 1-5
Exploratory research and advanced assignments; students elect problems after conference with the instructor in charge.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Anthropology

244 Lord Hall, 124 West 17th Avenue, 282-4149

200 Introduction to Physical Anthropology U 5
A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability. Not open to students with credit for 245. GEC bio sci course. SS Admis Cond course.

201 World Prehistory: An Anthropological Perspective U 5
World prehistory from the origin of human culture through the development of civilization illustrated by selected examples; archaeological field method; concepts of analysis and interpretation. Not open to students with credit for 210. GEC soc sci indivisuals and groups course. SS Admis Cond course.

202 Peoples and Cultures: An Introduction to Cultural Anthropology U 5
A survey of tribal and peasan folk peoples in the several world culture regions; culture concepts; study of selected topics. Not open to students with credit for 210. GEC soc sci indivisuals and groups course. SS Admis Cond course.

294 Group Studies U 2-5
Prepared to give groups of students an opportunity to pursue special studies in topics not otherwise offered. SS Admis Cond course.

300 Human Origins U 5
Prepared to give groups of students an opportunity to pursue special studies in topics not otherwise offered. SS Admis Cond course.

301 Modern Human Physical Variation U 5
Survey of modern human biological diversity; examination of the underlying evolutionary and adaptational mechanisms responsible; exploration of the interplay between biology and behavior in adaptation. SS Admis Cond course.

350 Prehistoric Indians of the Ohio Valley U 5
The archaeology and cultural history of the Ohio Valley from the first human settlement to European colonization, emphasizing the Adena, Hopewell, and Ft Ancient traditions. Not open to students with credit for 235.

401 Fundamentals of Archaeology U 5
Introduction to basic archaeological theory and practice including fundamental field and laboratory, principles of survey, excavation, chronological analysis, typology, and paleoethnography. Not open to students with credit for 235.

402 Physical Anthropology of Selected World Regions U 5
Description and analysis of simple and complex hereditary characteristics in order to evaluate origin adoptions and affinities of populations in a world region. Not open to students with credit for 235.

411 Human Ecological Adaptations U 5
A study of the interactive relationships between humans and their environments, past and present, with a focus on human biology. Not open to students with credit for 235.

421 Regional Survey Course in Cultural Anthropology U 5
A survey of the cultures of selected regions.

421.01 China
A general survey of the traditional Chinese culture and society; family, kinship, and socio-political organizations; their transformations during the last century. SS Admis Cond course.

421.02 Southeast Asia
Survey of the peoples of the region and their cultures; prehistoric origins; diversity and similarity; processes of modernization. SS Admis Cond course.

421.03 Traditional Africa
Traditional cultures of Africa south of the Sahara; distribution of physical types; languages; cultural areas; West Coast kingdoms as a source of the American Black. SS Admis Cond course.

421.04 Changing Societies in Africa
Study of the ways in which the retention of established customs and the acceptance of innovation have interacted in selected spheres of life in contemporary Africa. SS Admis Cond course.

421.05 Ireland
An examination of Irish prehistory and history and of Irish peasant culture and its influence on contemporary esthetics and its diffusion to the Americas. SS Admis Cond course.

421.06 Israel
A general survey of traditional Jewish culture and society; family, kinship, values, religion, and politics; recent changes during modernization. SS Admis Cond course.

421.07 India
A survey of Indian society and culture; family, kinship, caste, political and economic life, religions, and worldviews; the rural-urban continuum. SS Admis Cond course.

421.08 Korea
An anthropological survey of traditional and contemporary Korean culture and society with emphasis on kinship, community organization, social structure, modernization, and economic development. SS Admis Cond course.

451 Crossroads: The Middle East Before Sumer U 5
The roles of North Africa and Southwest Asia as stimulators and disseminators of cultural developments before the invention of writing. Not open to students with credit for 235.

530 Socio-Cultural Dimensions of Japanese Business U G 5
An exploration of features of Japanese culture and society and how they are manifested in the world of Japanese business. SS Admis Cond course.

552 History of Anthropological Theory U G 5
Major theoretical viewpoints in anthropology seen in their historical context. SS Admis Cond course.

552 Old World Prehistory U G 5
Prepared to give groups of students an opportunity to pursue special studies in topics not otherwise offered. SS Admis Cond course.

553 New World Prehistory U G 5
Prepared to give groups of students an opportunity to pursue special studies in topics not otherwise offered. SS Admis Cond course.

553.01 Aztecs, Maya, and their Predecessors
The archaeology and cultural history of Mexico and Guatemala with emphasis on agricultural origins and the development of complex society. SS Admis Cond course.

553.02 Prehistoric Indians of Eastern North America
Survey of the archaeology and cultural history of North America east of the Rocky Mountains. SS Admis Cond course.

Sp Qtr. 2-2 hr. SS Admis Cond course.
553.03 Prehistoric Indians of Western North America
Survey of the archaeology and culture of North America north of Mexico and west of the Rocky Mountains, including the American Southwest, Mexico, and the Andes. No credit for 550, 551, or 551.01.

556 Archaeological Training Expedition U 8-16
Survey and excavation of prehistoric archaeological sites; trains students in methods and techniques of archaeological field research. Dancey and Yerkes.

557 Issues of the Contemporary World U 5
Prerequisite: Sr. standing. GEC contemporary world courses.

597.01 Colonial Conflict In Developing Nations
Analysis of cultural conflict in developing nations resulting from rapid and extensive technological and social change. Chen and Moore.

597.02 Women, Culture, and Development
Analysis of the dramatic changes occurring in women's lives in response to development and modernization; developing and developed countries compared.

597.03 The Prehistory of Environment and Climate
History of modern biotic communities, biological evidence of climatic change during the late glacial and Holocene, and exploration of the responses of terrestrial ecosystems to climatic forces.

597.04 The Molecular Revolution: Heredity, Genome Mapping, and Genomics
Interface of genetic technology, genome project, and health against background of societal tensions, genomics, and dilemmas of genetic testing, and repercussions of molecular revolution.

601 Medical Anthropology U 5
Biocultural and sociocultural aspects of health in modern and prehistoric populations.

601.01 Biosocial Aspects of Health
Biomedical and biosocial influences on problems of human health throughout the world, focusing upon the evolutionary implications of these problems.

601.03 Biocultural Adaptations In Prehistory
Effects of culture and behavior on adaptations and the evolution of prehistoric populations. Sculli.

601.04 Global Perspectives on Women's Health
A cross-cultural comparison of the political, economic, social, and biological issues surrounding women's health.

602 Special Topics in Anthropology U 5
Detailed examination of select topics concerning the recovery and analysis of archaeological data.

602.01 Strategy of Archaeological Field Research
Design of archaeological data recovery programs and their implementation through survey, excavation, and other methods. Dancey.

602.02 Archaeological Laboratory Methods
Practical experience in the laboratory analysis of archaeological materials with emphasis on stone, bone, and ceramic artifacts; preparation of reports on analytical procedures and results. Dancey, Gremillion, Johnston, and Yerkes.

602.03 Environmental Archaeology
A survey of the principles, methods, and techniques of prehistoric environmental analysis; emphasis on understanding Pleistocene and Holocene environments as they relate to archaeology. Yerkes.

510 Ethnobotany U 5
Introduction to the anthropological study of human interactions with the plant world.

620 Special Topics in Cultural Anthropology U 5
Detailed examination of topics of special interest in contemporary cultural anthropology.

620.02 The Anthropology of Women

620.03 Peasant Society and Culture

620.05 Cultural Ecology

620.06 Folkloristic Anthropology

620.07 Anthropology of Education

620.08 The Anthropology of Sex
Primate sexual behavior; sex and the origins of society and culture; sexual maturation and anciculture; cross-cultural sexuality; sex in art and folklore; sex research.

620.11 Anthropology of Religion
World views in tribal and peasant cultures with an emphasis on religion; integration of religion with other aspects of culture. Not open to students with credit for 515.

620.12 Psychological Anthropology
Anthropological contributions to the field of social psychology; variations in personality as associated with variations in culture; the range of personality differences within various cultures. Not open to students with credit for 600.

620.13 Tribal Society and Culture
Forms of social organization in simpler societies; dynamics of social relations in such societies; a comparison of simpler forms of social structure with complex forms.

620.16 Japanese Minorities
Japanese minorities: Ainu, Koreans, outcasts, and other groups; social organization, ethnic identity, and international perceptions.

620.17 East Asian Women
Cross-cultural perspectives on the status and roles of Chinese, Japanese, and Korean women in various social settings, including the family, work places, and national economy.

620.18 Theoretical Issues and the Ethnography of the Middle East
The major intellectual currents informing contemporary ethnographic research in the Middle East.

620.19 Urban Anthropology U 5
An examination of urban life and the variety of the urban experience around the world, and the nature of anthropological research in cities. Not open to students with credit for 620.04.

620.20 Language and Culture in Education U 5
Examination of the problems of educating children of diverse cultural and linguistic backgrounds in the U.S. school system.

620.21 Special Topics in Physical Anthropology U 5
Topics of current concern to physical anthropologists. Not open to students with credit for 620.04.

620.22 Special Topics in Biological Anthropology U 5
Examination of the assumptions and concepts underlying analysis of archaeological data; methods of reconstructing cultural history, past lifeways, and explaining cultural change. Dancey.

620.23 Issues in Archaeological Theory U 5
Examination of the assumptions and concepts underlying analysis of archaeological data; methods of constructing cultural history, past lifeways, and explaining cultural change.
675 Introduction to Anthropological Linguistics U G 5
Relations of language to social organization, world view, socialization, and cultural analysis. Zahariak.
Wi Qtr. 5 cl. Prereq: 10 cr hrs in anthrop or permission of instructor. Not open to students with credit for 575.

605 Summer Field School in Archaeology U G 3-12
Practical experience in archaeological fieldwork including site survey, excavation, surveying and mapping, preservation, and other related methods and techniques of data recovery. Dancey and Yerkes.
Su Qtr. Full lines in expedition camps. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Field school is conducted at a site within commuting distance of the Columbus campus.

693 Individual Studies U G 1-5
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable. These courses are graded S/U.

693.01 Theory

693.02 History

693.03 Anthropological Linguistics

693.04 Research Methodology

693.05 Prehistory

693.06 Ethnography

693.07 Physical Anthropology

694 Group Studies U G 2-15
Designed to give groups of students an opportunity to pursue special studies in topics not otherwise offered.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

701 Advanced Topics in Physical Anthropology U G 5
Discussion of advanced topics in human variation and hominid evolution; emphasis on critical analysis and evolution of theoretical topics in research design.
2 2-hr cl., 1 hr arr. Prereq: Permission of instructor.

701.01 Modern Human Physical Variation
Survey of modern human biological diversity; examination of the underlying evolution and adaptational mechanisms responsible; exploration of the interplay between biology and behavior in adaptation. Crews.
Not open to students with credit for 535 or 603.04.

701.02 Hominid Paleoanthropology
A comprehensive study of the fossil hominids; fossils of Homo sapiens and their relation to other fossil hominids. Poole.

702 Theories in Cultural Anthropology U G 5
Major theoretical orientations in cultural anthropology; the developmental histories of the major theoretical schools and examination of their respective philosophical foundations. Chen.
Au Qtr. 2 2-hr cl., arr time. Not open to students with credit for 603.01 or 603.02.

703 Culture and Language U G 5
Development and range of anthropological concerns with language; emphasis on utility of linguistic approaches, methods, and theories to other subdisciplines of anthropology. Zahariak.
Au, Wi, Sp Qtr. 2 2-hr cl. Prereq: 675 or Linguist 601, or equiv and permission of instructor.

710 Field Methods in the Study of Culture U G 5
Theoretical and practical preparation for the field study of cultures. Au, Wi, Qtr. 2 2-hr cl., arr time. Prereq: Permission of instructor. Not open to students with credit for 510G.

750 Osteology and Odontology Laboratory U G 6
Advanced theoretical and practical study of an osteological or odontological problem from data collection through data analysis to the presentation of results.
Wi, Sp Qtr. 2 3-hr cl. Prereq: 601.03 and 640.03. Repeatable to a maximum of 18 cr hrs.

H783 Honors Research U 3-5
Su, Au, Wi, Sp Qtr. Prereq: 4th yr standing with a grade of A in at least half of the anthropology courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in anthropology. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

801 Seminars in World Prehistory U G 5
Au, Wi, Sp Qtr. Prereq: Admission to grad program.

801.01 Archaeology of Hunter-Gatherer Societies
Advanced study of hunter-gatherer band society from theoretical, ethnographic, and archaeological perspectives. Yerkes.

801.02 Origins of Food Production
Advanced theoretical and comparative study of the origins of food production in the Old and New Worlds. Gremillion.
Not open to students with credit for 603.07.

801.03 The Archaeology of Complex Societies
Advanced theoretical and comparative study of the rise and fall of complex societies in antiquity in the Old and New Worlds. Wi Qtr. 1 3-hr cl.

805 Seminars in Ethnology U G 3-5
Su, Au, Wi, Sp Qtr. 1 2-hr cl. Repeatable to a maximum of 45 cr hrs, not more than 10 of which shall be in any one of the following topics.

A-- North America
D-- East Asia
F-- South Asia
K-- Caribbean
L-- Africa
P-- Southeast Asia: Kinship Marriage and Family
Q-- Southeast Asia: Religious Systems and World Views
R-- Asian Anthropology and Anthropologists: Theoretical Perspectives

810 Seminars in Cultural Anthropology U G 3-5
Su, Au, Wi, Sp Qtr. 1 2-hr cl. Repeatable to a maximum of 45 cr hrs, not more than 10 of which shall be in any one of the following topics.

A-- Nature of Culture
D-- Enculturation
E-- Social Organization
F-- Religious Behavior
G-- Acculturation, Change, and Stability
I-- Peasant Cultures
J-- Cultural Evolution
K-- Human Ecology
L-- Anthropology of Political Systems
P-- Anthropology of Education
Q-- Study Design and Data Analysis
R-- Theory and Problems in Cultural Anthropology
T-- Experiments in Anthropological Fieldwork: Realism and Reflexity
U-- Ethnographic Field Experience
V-- Women
X-- Political Economy of Development and Underdevelopment
Y-- Revolution and Revitalization Movements
Z-- Ethnopsychiatry

820 Seminars in Physical Anthropology U G 3-5
Su, Au, Wi, Sp Qtr. 1 2-hr cl. Repeatable to a maximum of 30 cr hrs, not more than 10 of which shall be in any one of the following topics.

A-- Evolutionary Theory
D-- Field and Laboratory Methods
E-- Fossil Hominids
F-- Non-Human Primate Behavior
G-- Population Genetics
I-- Biocultural Adaptation
J-- Primate Anatomy
K-- Biomedical Anthropology
L-- Field Methods in Primate Behavior
M-- Field Methods in Primate Behavior
N-- Special Topics
P-- Human Growth and Development
Q-- Special Topics
R-- Quantitative Methods

830 Seminars in Prehistory U G 3-5
Su, Au, Wi, Sp Qtr. 1 2-hr cl. Repeatable to a maximum of 30 cr hrs, not more than 10 of which shall be in any one of the following topics.

A-- Method and Theory
D-- Archaeology of High Civilizations
E-- Special Problems in Archaeology
F-- Old World History
G-- North American Archaeology

880 Case Studies in Forensic Anthropology U 1
Discussion of actual forensic cases by students who have worked on them; application of theoretical forensic anthropology to practical situations. Sp Qtr. 1 1-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.
Anthropology

993 Individual Studies G 1-5
Su, Au, Wi, Sp Qtr's. 2 conr hrs. Prereq: Written permission of instructor. Repeatable. This course is graded S/U.

A— Theory
B— History
C— Anthropological l linguistics
D— Research Methods
E— Prehistory
F— Ethnology
G— Physical Anthropology
I— Unclassified
J— Cultural Anthropology

998 Research in Anthropology: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research in Anthropology: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Arabic

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

101 Elementary Modern Standard Arabic I
Developing the ability to use Arabic functionally and communicatively in context; intensive oral interaction with instructor and fellow students; the basics of the writing system.
Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

101.01 Classroom Track U 1-5
5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.51 Individualized Track U 1-5
Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr or hr to the next, with proficiency at the level of 80% required for advancement.

102 Elementary Modern Standard Arabic II
Developing further language ability through learning how to perform certain functions orally and using them with fellow students; reading and writing passages reflecting their abilities.
Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

102.01 Classroom Track U 5
Au, Wi, Sp Qtr's. Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtr's. Prereq: Grade of B- or above in 101.01, or 5 cr hrs of 101.51, or permission of instructor. Students may register for 101.51 or 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr or hr to the next, with proficiency at the level of 80% required for advancement.

103 Elementary Modern Standard Arabic III
Further language functions requiring the use of more complex structures; intensive oral interaction with instructor and fellow students; reading practice in and out of class.
Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.01 Classroom Track U 5
Au, Wi, Sp Qtr's. 5 cl. Prereq: 102.01, or 5 cr hrs of 102.51, or 110. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

103.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtr's. Prereq: Grade of B- or above in 102.01, or 5 cr hrs in 102.51, or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr or hr to the next, with proficiency at the level of 80% required for advancement.

104 Intermediate Modern Standard Arabic I
Building on previously acquired functional abilities; using Arabic to express opinion and feelings; oral interaction in the classroom; reading authentic texts of various genres.
Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

104.01 Classroom Track U 5
Au, Wi, Sp Qtr's. 5 cl. Prereq: 103 or 112. Not open to students with credit for 102. This course is available for EM credit.

104.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtr's. Prereq: Grade of B- or above in 103.01, or 5 cr hrs in 103.51, or permission of instructor. Students complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr or hr to the next, with 80% proficiency required for advancement.

151 Basic Colloquial Arabic I
Introduction to phonology and grammar of the spoken language of educated urbanites of the Eastern Arab world.
Su Qtr. Not open to students with credit for 106 or 151 or 201. Does not satisfy ASC foreign language requirement.

151.01 Classroom Track U 5
5 cl.

151.51 Individualized Track U 1-5
Arr. Prereq: Written permission of instructor.

152 Basic Colloquial Arabic II
Continuation of 151; analysis of and drill in morphological and syntactic patterns; expansion of vocabulary; practice in conversation.
Wi Qtr. 5 cl. Prereq: 151 or permission of instructor. Not open to students with credit for 107 or 202. Does not satisfy ASC foreign language requirement.

205 Intermediate Modern Standard Arabic II
Initiating and sustaining communication; reading and understanding short authentic passages; and writing to express many language functions.

205.01 Classroom Track U 5
Au, Wi, Sp Qtr's. 5 cl. Prereq: 104.01 or 5 cr hrs of 104.51. Students must register for and complete 5 cr hrs during the qtr.

205.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtr's. Prereq: Grade of B- or above in 104.01, or 5 cr hrs of 104.51, or permission of instructor. Students register for and complete 1 to 5 cr hrs during the qtr. Progress is sequential from one cr or hr to the next, with proficiency at the level of 80% required for advancement.

241 Culture of the Contemporary Arab World U 5
A general survey and examination of the socio-cultural structure of the modern Arab world.
Su, Au, Wi, Sp Qtr's. 5 cl. H241 (honors) may be available to students enrolled in an honors program or by permission of dept. Taught in English. GEC arts and hums cultures and ideas course.

Masterpieces of Near Eastern Literature in Translation
See NELC 272.

253 Intermediate Colloquial Arabic U 5
Intensive practice in speaking Arabic with emphasis on various cultural aspects of Arab life.
Sp Qtr. 5 cl. Prereq: 152 or permission of instructor. Does not satisfy ASC foreign language requirement. Not open to students with credit for 153.

293 Individual Studies U 1-15
Su, Au, Wi, Sp Qtr's. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

294 Group Studies U 1-15
Au, Wi, Sp Qtr's. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

367 Issues in Arab-American Society, Culture, and Literature U 6
Discussion, analysis, and writing about issues relating to Arab-American culture, society, and literature within the context of social diversity in the United States.
Au Qtr. 2.0-6.0 cl. Prereq: English 110 or 111 or equiv. and soph standing or above. GEC second writing and social diversity course.

371 Classical and Medieval Arabic Literature in Translation U 5
Reading and analysis of major works of Arabic literature from the 8th to the 17th centuries including classical poetry, the Qur'an, and the Arabic Nights.
Wi Qtr. 5 cl. Not open to students with credit for 271 and 272. GEC arts and hums lit course.

372 Modern Arabic Literature in Translation U 5
Reading and analysis of representative works of the 19th and 20th centuries; discussion of development of major movements and genres in modern Arabic literature.
Au Qtr. 5 cl. M372 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: English 110 or 111 or equiv. Not open to students with credit for 273 or Wom Stds 372. Cross-listed in Women's Studies. GEC arts and hums lit course.
400 Arabic Grammar U 5
5 cl.
400.01 Arabic Grammar I
Accelerated introduction to the structure of modern standard and classical Arabic: phonology, morphology, and syntax, with emphasis on development of reading comprehension skills.
Wi Qtr. Prereq: 104. Not open to students with credit for 402.
400.02 Arabic Grammar II
Continuation of 400.01 with emphasis on the grammatical analysis and comprehension of authentic texts selected from different periods and genres.
Sp Qtr. Prereq: 400.01 or permission of instructor.

401 Intermediate Literary Arabic Reading U 5
Developing reading skills through reading adapted and authentic Arabic texts; selections reflect cultural and literary aspects of Arab-Islamic civilization.
Au Qtr. 5 cl. Prereq: 205 or permission of instructor.

403 Intermediate Arabic Conversation and Composition U 5
Practice in aural comprehension, conversation, and controlled compositions on various aspects of Arabic culture.
Sp Qtr. 5 cl. Prereq: 205. Not open to students with credit for 604.

503 Advanced Arabic Conversation and Composition U 5
Intensive practice in speaking and writing Arabic at an advanced level based on contemporary literary usage; conducted entirely in Arabic.
Wi Qtr. 5 cl. Prereq: 403 or permission of instructor. Not open to students with credit for 601.

610 Introduction to Arabic Linguistics U G 5
An introduction to the structure of the Arabic language, both spoken and written.
Wi Qtr. 5 cl. Prereq: 103 or 152, and Linguist 601, or permission of instructor.

611 History of the Arabic Language U G 5
Survey of the evolution of the Arabic language in its cultural and historical setting.
Wi Qtr. 5 cl. Prereq: Permission of instructor. GEC third writing course.

615 Translation: Theory and Practice U G 5
Examination of some general guidelines for translating from Arabic to English or from English to Arabic, depending on the first language of the student.
Sp Qtr. 2-2 hr. cl. Prereq: Permission of instructor. Advanced reading proficiency in second language.

626 Introduction to the Qur’an U G 5
A linguistic, literary, and cultural analysis of selected chapters from the Qur’an.
Au Qtr. 5 cl. Prereq: 403.

627 Classical Arabic Poetry U G 5
Selected readings from classical and medieval Arabic poetry; Arabic metrics and literary theory.
Sp Qtr. 5 cl. Prereq: 403.

628 Classical Arabic Prose U G 5
Selected readings reflecting the evolution of Arabic prose literature from its origins to the late Abbasid period.
Wi Qtr. 5 cl. Prereq: 403.

651 Contemporary Arabic Prose Fiction U G 5
Reading and analysis of short stories and novels representative of major developments and trends of the 20th century.
Au Qtr. 5 cl. Prereq: 403. Not open to students with credit for 622 or 625.

652 Contemporary Arabic Poetry and Drama U G 5
Reading and analysis of plays and poems representative of major developments and trends of the 20th century.
Sp Qtr. 5 cl. Prereq: 403. Not open to students with credit for 623 or 624.

671 The Qur’an in Translation U G 5
An introduction, in English, to the literary, religious, and cultural implications of the fundamental Book of Arabic literature and of Islamic civilization.
Au Qtr. 5 cl.

672 Arabic Folk Narrative in Translation U G 5
Literary and cultural aspects of 1001 Nights and other popular narratives (epics, legends, folktales) in the Arab world.
Sp Qtr. 2-2 hr. cl.

680 Basic Bibliographic and Reference Tools in Arabic and Islamic Studies U G 5
Sp Qtr. 5 cl. Prereq: 10 cr hrs in Middle Eastern history or literature or equiv.

692 Workshop U G 1-9
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Su Qtr. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable to a maximum of 27 cr hrs. This course is graded S/U.

693 Individual Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-15
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

710 Studies in Arabic Linguistics U G 5
Advanced analytical study of synchronic, diachronic, sociolinguistic, and dialectal topics and problems.
Su, Au, Wi, Sp Qtrs. 2 2-hr. cl. Prereq: 610 or 611 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

721 Studies in Arabic Poetry U G 5
Advanced study of specific poetic periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.
Su, Au, Wi, Sp Qtrs. 4 or 5 cl. Prereq: 10 or 15 or 60 cr hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 15 cr hrs.

722 Studies in Arabic Prose U G 5
Advanced study of specific periods, authors and/or genres of prose writing (literary or non-literary) involving extensive reading and discussion of primary and secondary materials.
Su, Au, Wi, Sp Qtrs. 4 or 5 cl. Prereq: 10 or 15 or 60 cr hrs of Arabic literature at the 600 level or equiv. Repeatable to a maximum of 20 cr hrs.

H783 Honors Research U 3-5
Offers undergraduates with special aptitudes a greater opportunity to do independent study and research than is possible in normal course work.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the Arabic courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree BA with distinction in Arabic. Failure to receive a mark of 5 in this course is a disqualification for special honors. This course is graded S/U.

801 Teaching Arabic at the College Level G 5
Methods and techniques for the teaching of Arabic at the college level.
Au Qtr. 2-wk intensive workshop followed by 1 2-hr cl weekly. Prereq: TA in NELC or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 cr hrs.

811 Seminar in Arabic Studies G 5
Intensive investigation of a selected topic or problem in Arabic linguistics, philology, literature, or cultural literature.
Su, Au, Wi, Sp Qtrs. 3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. Preparation of major research paper is required.

998 Research in Arabic G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Architecture
109 Brown Hall, 190 West 17th Avenue, 292-1012

200 Outlines of Architecture U 3
Introduction to architecture; emphasis upon the nature of the art/science of architecture and its physical and cultural context.
3 cl. H200 (honors) may be available to students enrolled in an honors program. Required for students intending to major in arch. VPA Admis Cond course.

201 Introduction to Architectural History U 3
Introduction to architecture, emphasis on three-dimensional qualities of complex architectural form and space as determined by cultural history.
3 cl. VPA Admis Cond course. Not open to 3rd and 4th year arch students.
209 Introduction to Basic Design in Architecture U 5
An introduction to basic design problem solving; concepts of point, line, plane, and space organization; principles of unity/variety, order, balance, proportion, scale, etc.; orthographic projection and axonometrics; pattern diagramming; and basic design consequences of human activity.
Su, Au, Wi, Sp Qtrs. 1 c, 6 lab hrs. VPA A&L 357-C, Corr.

241 Architectural Design I U 6
Studio introduction to architectural design problem solving; concepts of architectural aesthetic principles; value drawing techniques; model building; anthropometrics; and human gathering and circulation patterns.
Au Qtr. 3 c, 9 lab hrs. Prereq: 200 and 202; Math 150 and 157 or equiv; Physics 111 and 112 or equiv and submission of portfolio. Only open to students enrolled in AHRS, who have completed the math, physics, and AHRS prerequisites with a 2.15 CPHR; have earned a 2.15 CPHR with at least 45 earned hrs; or permission of the undergraduate committee.

242 Architectural Design II U 6
Study focusing upon elementary diagramming and analysis of human needs; concepts of color theory; natural lighting; historical design precedents; and horizontal and vertical movement systems.
Wi Qtr. 3 c, 9 lab hrs. Prereq: 241 and 271. Open only to students enrolled in arch.

243 Architectural Design III U 6
Study focusing upon elementary architectural programming; concepts relating human use to architectural form, space, symbol and site; site analysis; functional diagrams, matrices and charts; barrier-free design and 19- and 20th-century design precedents.
Sp Qtr. 3 c, 9 lab hrs. Prereq: 242. Open only to students enrolled in arch.

271 Architectural Graphics: Freehand Drawing for Architects U 3
Fundamental freehand drawing principles necessary to the investigation, visualization and presentation of architectural design ideas.
Au Qtr. 1 c, 5 lab hrs. Concur: 241, GEC arts and hums VPA course.

272 Architectural Graphics: Constructed 3-D Drawings U 3
Study and application of graphic theory and techniques such as axonometrics, perspectives, and shades and shadows.
1 c, 5 lab hrs. Prereq: 271 or permission of instructor.

273 Architectural Presentation Techniques U 3
Study and application of architectural presentation techniques in pencil, ink, and other media.
1 c, 5 lab hrs. Prereq: 272 or permission of instructor.

293 Individual Studies in Architecture U 1-5
Designed for students who desire to pursue, individually, special studies in the discipline.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies in Architecture U 1-5
Designed for students who desire to pursue, in a group, special studies in the discipline.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs.

341 Architectural Design IV U 6
Study focusing upon analysis of historical and contemporary building types, graphic and verbal architectural analysis, and programmatic diagrams, matrices, etc.; human behavioral influences on architecture.
Au Qtr. 2 c, 10 lab hrs. Prereq: 243. Open only to students enrolled in arch.

342 Architectural Design V U 6
Study focusing upon relationship of wood and masonry material and construction to architectural design; introduction to building codes; bearing wall and post and beam structural systems.
Wi Qtr. 2 c, 10 lab hrs. Prereq: 341. Open only to students enrolled in arch.

343 Architectural Design VI U 6
Study focusing upon relationship of steel and concrete materials and construction to architectural design; introduction to zoning codes; skeletal and rigid frame structural systems.
Sp Qtr. 2 c, 10 lab hrs. Prereq: 342. Open only to students enrolled in arch.

403 Senior Seminar U 3
Study of architecture in terms of its broader cultural, political, geographic, economic, and/or social context; third writing course.
1 3-hr c. Prereq: Second writing course and 4th yr standing in arch; or permission of instructor. H403 (honors) may be available to students enrolled in an honors program by permission of instructor. GEC course.

426 Introduction to Architectural Structures U 4
Survey of statics and strength of materials; survey of structural systems with emphasis on integrated structural behavior and selection of the best structural system.
Au Qtr. 4 c. Prereq: Physics 111. BER/LAR/GEC course.

441 Architectural Design VII U 6
Study focusing upon the relationship of buildings and site; site analysis; alternative energy and passive solar design; computer-aided design.
Au Qtr. 1 c, 11 lab hrs. Prereq: 343. Open only to students enrolled in arch.

442 Architectural Design VIII U 6
Study focusing upon application of human behavioral analysis techniques to architectural design; programming; post occupancy evaluation.
Wi Qtr. 1 c, 11 lab hrs. Prereq: 441 or permission of Undergrad Committee. Open only to students enrolled in arch.

443 Architectural Design IX U 6
Study focusing upon relationship of mechanical systems, life cycle costing, value engineering and project financial feasibility to architectural design.
Sp Qtr. 1 c, 11 lab hrs. Prereq: 442 or permission of the Undergrad Committee. Open only to students enrolled in arch.

H444 Special Honors Design Studies U 6
Study for group and/or individual design studies.
Su, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing in arch with a minimum cumulative pt/hr ratio of 3.20; permission of Instructor and Dept Honors Committee. Accepted students may substitute this course for 441, 442, or 443.

600 History of Ancient and Medieval Architecture U G 3
Survey of history of architecture of Mesopotamia, Egypt, Greece, and Rome; includes early Christian, Byzantine, Romanesque, and Gothic periods; includes historical inquiry, physical, and cultural influences, theories, and analysis techniques.
3 c-hrs, 1 1-hr rec. H600 (honors) may be available to students enrolled in an honors program. Not open to students with credit for 301 and 302.

601 History of Renaissance and Baroque Architecture U G 3
Survey of history of architecture of Renaissance, Mannerist, and Baroque periods; includes historical inquiry, physical and cultural influences, theories, and analysis techniques.
3 c-hrs. H601 (honors) may be available to students enrolled in an honors program. Not open to students with credit for 303. Open to majors and non-majors.

602 History of Enlightenment and 19th-Century Architecture U G 3
Survey of history of Enlightenment and 19th-Century architecture; includes historical inquiry, physical and cultural influences, theories, and analysis techniques.
3 c-hrs. H602 (honors) may be available to students enrolled in an honors program. Not open to students with credit for 304. Open to majors and non-majors.

603 History of Modern Architecture U G 3
Survey of history of modern architecture, includes historical inquiry, physical, and cultural influences, theories, and analysis techniques.
3 c-hrs. H603 (honors) may be available to students enrolled in an honors program. Not open to students with credit for 305. Open to majors and non-majors.

604 History and Preservation of 19th- and 20th-Century American Architecture U G 3
Investigation of 19th- and 20th-century American architecture with emphasis upon issues of preservation and conservation.
3 c-hrs. Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

605 Research Methods in Architectural History and Preservation U G 3
A survey of literary and physical research techniques in architectural history and preservation; identification and recording of historic buildings; field work in inventory techniques.
Sp Qtr. 3 c, Prereq: Grad standing or 4th yr standing in arch or permission of instructor.

606 Architectural Preservation: Administration and Practice U G 3
An outline of regulations, laws, economic incentives, funding sources, and technical/design guidelines as they affect architectural preservation.
3 c-hrs. Prereq: 4th yr standing or grad standing in arch or permission of instructor.

509 Evolution of the Architectural English Environment U G 3
Survey of the development of the English architecture in response to the physical characteristics of the island and the changing social, political, and economic context.
3 c-hrs. Not open to students with credit for 309. Open to majors and non-majors.
610 Survey of Architectural Theory U G 3
Survey of architectural theory which reviews the history of architecture while searching for reinterpretations, strategies, structures, and precedents for theory in Western intellectual history.
3 cl. Prereq: 301, 302, 303, 304, 305, or 600, 601, 602, and 603; or permission of instructor. Not open to students with credit for 401.

616 Introduction to Architectural Structures G 3
Survey of statics and strength of materials; survey of structural systems with emphasis on integrated structural behavior and selection of best structural systems.
Au Qtr. 2 2-hr cl. Open only to students in 3+ Master of Architecture Program.

617 Wood and Steel Structure U G 3
Principles, elements, computations, detailing, and connections for structural wood and steel.
Wi Qtr. 3 cl. Prereq: 426 or 616. Not open to students with credit for 427.

618 Masonry and Concrete Structure U G 3
Principles, elements, computations, detailing, and connections for structural masonry and concrete.
Sp Qtr. 3 cl. Prereq: 427 or 618. Not open to students with credit for 428.

626 Introduction to Building Construction U G 3
Introduction to construction materials and building systems; survey of building industry and its relation to architectural practice.
Au Qtr. 3 cl, 2 hrs lab. Prereq: Jr standing or permission of instructor. Not open to students with credit for 326.

627 Building Construction I U G 3
Detailing of building sections, simple enclosures and structural assemblies emphasizing wood and steel construction.
Wi Qtr. 3 cl, 2 hrs lab. Prereq: 326 or 626. Not open to students with credit for 327.

628 Building Construction II U G 3
Detailing of building sections, simple enclosures, and structural assemblies emphasizing masonry and concrete construction.
Sp Qtr. 3 cl, 2 hrs lab. Prereq: 327 or 627. Not open to students with credit for 328.

630 Computer Graphics for Architectural Design U G 3
Introduction to computer-aided architectural design for studio uses; theory of architectural modeling and application using commercially available software.
1 2-hr cl, 1 2-hr lab. Prereq: Admission to School of Architecture Program. Not open to students with credit for 371.

641 Accelerated Architectural Design I U G 5
Architectural analysis and problem solving for students in the 3+ Architecture Graduate Program.
Au Qtr. Prereq: Admission to the 3+ Master of Architecture Program.

642 Accelerated Architectural Design II U G 6
Continuation of 641.
Wi Qtr. Prereq: 641. Open only to students in the 3+ Master of Architecture Graduate Program.

643 Accelerated Architectural Design III U G 6
Continuation of 642.
Sp Qtr. Prereq: 642. Open only to students in the 3+ Master of Architecture Graduate Program.

653 Passive Solar Energy I U G 3
Investigation of the current development of energy conservation aspects in a building design in relation to passive solar energy.
3 cl. Prereq: 4th yr or grad standing in arch or permission of instructor.

654 Passive Solar Energy II U G 3
Study of energy evaluation of various types of passive solar energy systems and their applications in energy conservation in a building design.
2 2/4-hr cl. Prereq: 653 and arch major.

660 Computer-Aided Architectural Design and Graphics U G 4
Usage and development of computer graphics techniques in two and three dimensions as they apply to architectural drafting and design.

660.01 Two-Dimensional Computer-Aided Architectural Design and Graphics
Two-dimensional vector graphics oriented programming with emphasis on parameterization techniques and transformational operators applicable to architectural design and drafting.
2 2-hr cl. Prereq: 294A or 371 or En Graph 294A or enrollment in grad program or permission of instructor.

660.02 Three-Dimensional Computer-Aided Architectural Design and Graphics
Three-dimensional graphics oriented programming with emphasis on parameterization/transformations as they apply to reviration and perspective drafting of architectural compositions.
2 2-hr cl. Prereq: 660.01 or equiv and permission of instructor.

660.03 Integrated Computer Aids for Architectural Design
Color graphics and texture, sculpting operators, spatial grammars, and data structures as they apply to architectural design.
2 2-hr cl. Prereq: 660.02 or equiv and permission of instructor.

661 Architectural Environmental Systems U G 3
Survey of building energy sources, climate and site, energy and arch design, environmental control, heat loss and gain, plumbing and storm water systems, lighting fundamentals, and light sources.
Au Qtr. 3 cl. Prereq: Physics 112, enrollment in Graduate School or permission of instructor. Not open to students with credit for 461.

662 Electrical Systems in Architecture U G 3
Survey of daylight design, lighting design and application, principles of electricity, electrical systems and materials, service and utilization, and electric wiring design.
Wi Qtr. 3 cl. Prereq: 661 or equiv.

663 Mechanical Systems in Architecture U G 3
Survey of heating, cooling, and ventilation; environmental planning; climate control systems; solar energy; energy conservation; fire protection; acoustics; noise control and building signal and life-safety systems.
Sp Qtr. 3 cl. Prereq: 661.

671 Social and Psychological Influences on Architecture U G 3
Survey of the relationships between human-made surroundings and selected social/psychological processes basic to human functions; the application of this material to programming, design, and evaluations of settings for human use.
3 cl. Prereq: Arch 3rd yr standing or above.

672 Economic Influences on Architecture U G 3
Survey of economic issues and methods relevant to practice of architecture including the building delivery systems, market analysis, computation of present, future, and annual worth, life cycle costing, depreciation, and tax implications.
3 cl. Prereq: Arch 3rd yr standing or above.

685 Field Investigations in Architectural Preservation U G 5
Su Qtr. 3 cl, 10 hrs field lab. Prereq: Permission of dept.

685.01 Research Techniques
Architectural preservation research involving primary and secondary source literature and official public records, as well as physical research.

685.02 Planning and Design
Architectural preservation design including programming, design, and detailing in architectural restoration projects.

685.03 Fabric Analysis and Measured Drawings
Analysis of architectural structure and enclosure systems and preparation of measured drawings using photogrammetric techniques as well as hand measurements.

693 Individual Studies in Architecture U G 1-5
For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

694 Group Studies in Architecture U G 1-5
For students majoring in arch desiring to pursue special studies not offered in the fixed curriculum.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and completion of dept independent study form. Repeatable to a maximum of 15 or hrs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign

700 Allied Arts U G 3
Analysis of arts related to architecture and the expression of the nature of materials in architectural ornament, furniture and furnishings, and the garden.
3 cl. Prereq: Arch 4th yr or grad standing in arch or permission of instructor.

701 History of Architectural Theory U G 3
Survey of architectural theories as stated by architects, historians, and architectural critics.
3 cl. Prereq: Arch 4th yr standing or permission of instructor.
721 Architecture Acoustics G 3
The geometry of architectural design for good acoustics within auditoria, lecture rooms, music rooms, churches, etc., where hearing is important. 3 cr. Prereq: Grad standing in arch or permission of instructor.

722 Introduction to Architecture G 3
An introduction to the geometry of central projection and to methods of gaining architectural manual data for photography. 3 cr. Prereq: Grad standing in arch or permission of instructor.

724 Structural Design in Architecture G 3
Analysis and design of structural elements and systems; emphasis on integration of structures and building design. 3 cr. Prereq: 428 or 616 or permission of instructor.

725 History of Structures in Architecture G 3
Survey of structural concepts as related to the evolution of modern architectural, methods of construction, and architectural theory. 3 cr. Prereq: 428 or 616 or permission of instructor.

751 Practice of the Design Professions I G 3
History of professions and their clients; the professional's interaction with society and government substantive aspects of practice, including organization and communication; legal aspects of construction. Au Qtr. 3 cr. Prereq: Grad standing in arch or permission of instructor.

752 Practice of the Design Professions II G 3
Management of construction contracts; bonds and insurance operational procedures during negotiation and construction phases; arbitration; office and project case studies. Sp Qtr. 3 cr. Prereq: Grad standing in arch or permission of instructor.

H783 Honors Research U 3
Research and investigation for each student with individual conferences resulting in a proposal, objectives, bibliography, and other research. Arr. Prereq: 4th yr standing in arch with a minimum cumulative p-hr ratio of 3.20, permission of instructor and Dept Honors Committee. This course is graded S/U.

H784 Honors Project U 6
Development and promulgation of an honors project as proposed in H783. Arr. Prereq: H783, 4th yr standing in arch with a minimum cumulative p-hr ratio of 3.20, permission of instructor and Dept Honors Committee. Accepted students may substitute this course for 443. Completion and acceptance of the project is required for graduation with distinction in BS Arch.

801 Architectural Theory: Criticism G 3
Investigations in architectural criticism and strategies for interpreting buildings. Au Qtr. 3 cr. Prereq: Grad standing in arch; concour: 841.

802 Architectural Theory: Investigation of Context G 3
Investigations of architecture and its physical context. Wi Qtr. 3 cr. Prereq: Grad standing in arch; concour: 842.

803 Architectural Theory Seminar G 3
Investigations of Contemporary Architectural Theory Prereq: 802. Repeatable to a maximum of 6 cr hrs. Students select two of the following decimal subdivisions.

803.01 Architectural Issues I

803.02 Architectural Issues II

803.03 Architectural Issues III

803.04 Architectural Issues IV

803.05 Architectural Preservation Issues

803.06 Passive Solar Design Issues

810 Baumer Publications Seminar G 6
Focus on design and publication of material derived from visits of the Baumer Distinguished Visiting Professor, review of raw documents, presentation of graphic design strategy. Sp Qtr. 1-4-hr cr. Prereq: Permission of Graduate Studies Committee and 6th yr grad standing.

841 Advanced Architectural Design I G 6
Studio focusing on coordination and integration of material presented in the undergraduate design sequence with specific implementation of a comprehensive approach to building design. Au Qtr. 8 lab hrs. Concour: 801.

842 Advanced Architectural Design II G 6
Continuation of 841. Wi Qtr. 6 lab hrs. Concour: 802.

844 Architectural Studio Options G 6
Creative exploration of architectural design through studios taught by distinguished visiting critics and faculty members. Su, Au, Wi, Sp Qtrs. 8 lab hrs. Prereq: 802 and 842. Repeatable to a maximum of 24 cr hrs. Students select four of the following decimal subdivisions.

844.01 Advanced Design I

844.02 Advanced Design II

844.03 Advanced Design III

844.04 Advanced Design IV

844.06 Passive Solar Design

893 Individual Studies in Architecture G 1-6
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in arch, permission of instructor, and completion of dept independent study form. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

894 Group Studies in Architecture G 1-6
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in arch, permission of instructor. Repeatable to a maximum of 18 cr hrs.

899 Interdepartmental Seminar G 1-15
See interdepartmental Seminars. Su, Au, Wi, Sp Qtrs.

999 Research in Architecture G Arr
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Art

146 Hopkins Hall, 128 North Oval Mall, 292-5072

162 Concepts and Issues in Art U 2
An orientation for new art students and a survey of art making with an emphasis on contemporary works. Au, Sp Qtrs. 2 cr.

170 Beginning Drawing U 5
An introduction to basic freehand drawing, exploration of a range of drawing methods, media, concepts; emphasis on drawing from observation. Su, Au, Wi, Sp Qtrs. 1 cr. 5-2-hr labs. This course is available for EM credit. GEC arts and hums VPA course. VPA Admis Cond course.

172 Visual Studies: Two-Dimensional Art U 5
Basic concepts of two-dimensional art dealing with visual structure, process, content, and invention. Su, Au, Wi, Sp Qtrs. 5-2-hr labs. This course is available for EM credit. GEC arts and hums VPA course. VPA Admis Cond course.

182 Visual Studies: Three-Dimensional Art U 5
Basic concepts of three-dimensional art dealing with the organization of space and form, using a variety of materials, processes, tools. Su, Au, Wi, Sp Qtrs. 5-2-hr labs. Prereq or concour: 172. This course is available for EM credit.

201 Introduction to Photography U 5
Introduction to photographic theory, practice, and aesthetics through color slides and black and white image production and critique. 3-2-hr cl. Not open to students with credit for 203 or Photog 201 or 203. Students must supply 35 mm adjustable camera and color and black and white film, black and white paper, and slide carouse. GEC arts and hums VPA course. VPA Admis Cond course.

230 Introduction to Molten Glassworking U 5
Introduction to glass as a fluid material for artistic expression; emphasis on the development of original imagery made from molten glass. Au, Wi, Sp Qtrs. Prereq: 162, 170, 172, 182, 262, and 272; and Hist Art 210 or 211 or 212; or equivs with permission of instructor.
231 Beginning Cold Glassworking U 5
Exploration of contemporary possibilities for the visual imagery of preformed glass using traditional techniques as a departure point; emphasis on innovative approaches.
VPA Admis Cond course.

240 Fundamentals of Ceramic Art: Handforming U 5
Introduction to the art phases of the ceramic field; laboratory practice in the hand forming process.
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. GEC arts and hums VPA course. VPA Admis Cond course.

242 Fundamentals of Ceramic Art: Wheel U 5
Introduction to the ceramic arts through the use of the potter’s wheel with lectures covering a broad survey of the field of ceramics.
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. VPA Admis Cond course.

250 Visual Studies: Real Time and Recorded Time Arts U 3
Introduction to basic concepts of real time and recorded time-based artworks using a variety of processes and media.
Au, Wi, Sp Qtrs. 3 2-hr labs. Prereq: 170, 172, and 182.

270 Beginning Life Drawing U 5
Drawing from the human figure: discussion of drawing as related to significant traditions; lectures and demonstrations.
Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 170 and 172. Not open to students with credit for 272. This course is available for EM credit.

273 Painting I U 5
Introductory painting emphasizing fundamentals and their utilization as a basis for individual development; student initially works from still life; subsequent projects increase in complexity.
Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 270 or 272; and Hist Art 210 or 211 or 212; or eqv with permission of instructor. This course is available for EM credit.

275 Beginning Sculpture U 5
An introduction to the principles of sculpture, emphasizing basic forming processes and materials.
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 172, and 182; or permission of instructor. Not open to students with credit for 180. This course is available for EM credit. VPA Admis Cond course.

293 Individual Studies U 2-5
Preliminary studies for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 or hrs. These courses are graded S/U.

293.00 Drawing
293.10 Painting

2847 Group Studies U 1-5
Group studies for students in specialized programs.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

301 Photography II U 5
Second-level production course in black and white photography emphasizing technical and aesthetic explorations commenced in 201.
Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 201. Not open to students with credit for 403 or Photog 521.

340 Intermediate Ceramic Art: Handforming U 5
Studio practice in designing ceramic wares with emphasis on the hand forming processes.
Wi, Sp Qtrs. 5 2-hr labs, 6 hrs arr. Prereq: 240. Not open to students with credit for 245.

342 Intermediate Ceramic Art: Wheel U 5
Intermediate course utilizing potter’s wheel as forming process.
Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 242. Not open to students with credit for 244.

370 Intermediate Drawing U 5
Intermediate level drawing experience focusing on drawing from observation, exploration of materials and processes and the use of color.
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 162, 170, 182, 260, and 270; and Hist Art 210 or 211 or 212; or eqv with permission of instructor. Not open to students with credit for 274.

372 Visual Studies: Color U 5
An introduction to seeing and using color for all disciplines; projects deal with color organization, phenomena, and interaction.
Au, Wi, Sp Qtrs. 5 2-hr labs. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or eqv with permission of instructor.

373 Painting III U 5
A continuation of 273 emphasizing technical and conceptual fundamentals of painting from observation and abstraction with a focus in spatial relationships in painting.
Su, Au, Wi, Sp Qtrs. 3 2-hr labs, 9 hrs arr. Prereq: 273, 370, and 372.

375 Beginning Relief Printmaking U 5
Introduction to the practice and examination of several modes of artistic expression in the relief processes of printmaking.
Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or eqv with permission of instructor.

377 Beginning Serigraphy U 5
Introduction to the practice and examination of several modes of artistic expression in the serigraphic processes of printmaking.
Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or eqv with permission of instructor.

378 Beginning Intaglio Printmaking U 5
Introduction to practice and examination of several modes of artistic expression in the intaglio processes of printmaking.
Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or eqv with permission of instructor.

379 Beginning Lithography U 5
Introduction to the practice and examination of several modes of artistic expression in the lithographic processes of printmaking.
Au, Wi, Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 260, and 272; and Hist Art 210 or 211 or 212; or eqv with permission of instructor.

380 Construction Sculpture U 5
Exploration of a range of technical and conceptual concerns of sculpture, using wood as a primary material.
Sp Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 278; and Hist Art 210 or 211 or 212; or eqv with permission of instructor. Not open to students with credit for 260.

381 Metal Fabrication U 5
Introduction to metal fabrication, including casting, forging, and other processes.
Au, Wi Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, and 278; and Hist Art 210 or 211 or 212; or eqv with permission of instructor. Not open to students with credit for 281.

382 Life Sculpture U 5
Aspects of the human form studied in relation to the materials of sculpture; experimentation in a choice of materials: clay, wax, cement, and plaster.
Au, Wi Qtrs. 5 2-hr cl, 5 hrs arr. Prereq: 162, 170, 172, 182, 272, and 278; and Hist Art 210 or 211 or 212; or eqv with permission of instructor. Not open to students with credit for 282.

401 Photography III U 5
Third-level production course in black and white photography with emphasis in creative explorations including manipulations, through a sustained body of work.
Au, Wi, Sp Qtrs. 3 2-hr cl. Prereq: 301 or 403. Not open to students with credit for 503.

450 Digital Image Manipulation I U 5
Introduction to creating and manipulating graphic images on Macintosh using Photoshop, Painter; includes input/output of student work as applies to art students.
Au, Wi, Sp Qtrs. 2 3-hr cl/lab.

451 Multimedia Authoring U 5
Introductory integration to various electronic media, graphics, audio and video authoring systems; technical and aesthetic concepts of individual components emphasized.
Au, Wi, Sp Qtrs. 5 lec/demo hrs, 5 lab hrs. Prereq: 450 or permission of instructor. Repeatable to a maximum of 15 or hrs.

452 3D Computer Sculpture U 5
Study of concepts, aesthetics, procedures, and practice of sculpting on the computer.
Au, Wi, Sp Qtrs. 6 lec hrs, 4 lab hrs. Prereq: 450 and permission of instructor.

455 Holography I U 5
Explorations of three-dimensional laser holography as an artistic tool in art and science, through lectures, labs, demonstrations and critiques, students create and display holograms.
Au, Wi, Sp Qtrs. 5 lec/demo hrs, 5 lab hrs. Repeatable to a maximum of 15 or hrs.
524 Large Format Photography U G 5
Advanced still photography course dealing with the mechanics, aesthetics, and psychology of large format photography.
Sp Qtr. 3.3 hr cl. Prereq: 401 or 503, or written permission of instructor. Not open to students with credit for Photog 524. Student must supply 4 x 5 format film.

531 Color Printing U G 5
Introduction to color negative printing, its history, and current aesthetic issues surrounding work in color photography.
Au Qtr. 3.3 hr cl. Prereq: 401 or 553, and written permission of instructor. Not open to students with credit for Photog 531. Film processing supplied by student.

550 Digital Image Manipulation II U 5
Advanced creation and manipulation of graphic images on Macintosh computers as it applies to art students.
Au, Wi, Sp Qtrs. 2 2-hr labs. Prereq: 450 and 452, and permission of instructor. Repeatable to a maximum of 15 cr hrs.

551 New Media U 5
Approaches to new media projected imagery, digital control of objects and sound in installation events; performances and exhibitions.
Au, Wi, Sp Qtrs. 5 lec/demos hrs, 16 lab hrs. Prereq: Art Educ 252 or permission of Instructor. Repeatable to a maximum of 15 cr hrs.

552 3D Computer Animation U 5
Study of concepts, aesthetics, procedures, and practice in 3D computer animation.
Au, Wi, Sp Qtrs. 6 lec hrs, 4 c/ lab hrs. Prereq: 452 and permission of instructor. Repeatable to a maximum of 15 cr hrs.

555 Holography II U 5
Expanding the students' knowledge of holographic techniques, including computer generated holography in traditional and experimental arts.
Au, Wi, Sp Qtrs. 5 lec/demos hrs, 5 lab hrs. Prereq: 455 or permission of Instructor. Repeatable to a maximum of 15 cr hrs.

561 Expanded Arts I U G 5
A creative and conceptual multimedia exploration of the various aspects of the self, time, and movement; introduction of alternatives in medium, technique, and product.
Prereq: Jr standing or permission of instructor.
561.01 Aspects of Self
Au Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.
561.02 Aspects of Time
Wi Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.
561.03 Aspects of Movement
Sp Qtr. 6 studio hrs, 4 hrs arr. Prereq: Permission of instructor.

570 Multi-Level Drawing U 5
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 274 or 370.
570.01 Special Topics
Special topics in intermediate to advanced drawing materials and processes for personal expression with emphasis on development of analytical and critical skills.
570.02 Life Drawing Studio
Intermediate to advanced level courses focusing on issues of the figure.

573 Multi-Level Painting U 5
Intermediate painting; traditional subject matter such as figures, still lifes, and concepts relative to contemporary directions in painting.
Su, Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 373. Repeatable to a maximum of 10 cr hrs.

587 Third Year Sculpture Class U 5
Advanced study of sculptural processes, techniques, and concepts.
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 280, 281, and 282. Open only to sculpture majors.
587.01 Part 1
587.02 Part 2
Prereq: 587.01.
587.03 Part 3
Prereq: 587.02.

589 Undergraduate Internship U 3 or 5
Planned field, teaching, curatorial, or lab experience under academic and professional supervision.
Au, Wi, Sp Qtrs. Arr. Prereq: Art majors with photography emphasis, Jr standing or above, and permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs earned in Photog 589. Interns may receive no monetary compensation.

591 Studio Practice I U 2-5
Intermediate studio practice, following and continuing the basic program of courses undertaken in the first two years.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. The following decimal subdivisions, with the exception of 591.12, are open only to jrs and srs majoring in art. Each decimal subdivision repeatable to a maximum of 25 cr hrs.
591.03 Ceramics
591.04 Glass
591.06 Printmaking
591.11 Sculpture
591.12 Art and Technology

595 Undergraduate Seminar in Studio Art U 3
Presentations of studio work by seminar students, faculty, and visiting artists, with selected readings; accompanied by critical discussion emphasizing contemporary issues.
Wi Qtr. 1 3-hr cl. Prereq: Jr or sr standing in art or permission of Instructor. GEC third writing course.

630 Intermediate Molten Glassmaking U G 5
Molten glass as an artist's medium; emphasis on the evolution of a personal aesthetic through series studies.

631 Intermediate Cold Glassworking U G 5
Innovational approach in fabricated glass imagery; emphasis on the growth of artistic development through series studies.
Au, Wi, Sp Qtrs. Prereq: 231.

635 Photographic Criticism U G 3
Reading, lectures, and discussions dealing with the study and practice of photographic criticism to facilitate and enliven the understanding and criticism of photography.
Wi Qtr. 2 2-hr cl. Prereq: 403 or 636 or Art Ec 604 or written permission of Instructor. Not open to students with credit for Art Ed 635 or Photog 635. Cross-listed in Art Education.

640 Klin Building U G 5
Design, construction, and use of simple gas and electric ceramic studio kilns; practice in the various types and methods of firing.
Sp Qtr. 5.2-hr, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor.

641 Mold Making U G 5
Studies in the designing, fabrication, and uses of molds and molds in such multiple ceramic production processes as casting, jiggering, and pressing.
Wi Qtr. 5 2-hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor.

642 Monumental Building Techniques U G 5
Design and construction of large ceramic art forms.
Au Qtr. 5.2-hr labs, 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor.

644 Ceramic Glaze and Technology U G 5
Ceramic computations for art students; methods of representing ceramic composition; laboratory study and discussion of raw materials and their uses in bodies and glazes. 
Sp Qtr. 5.2-hr cl. 5 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Not open to students with credit for 441.

645 Advanced Special Projects U G 5
Advanced work developed in consultation with and under the close supervision of the instructor.
Au, Wi, Sp Qtrs. 3.3-hr labs, 6 hrs arr. Prereq: 240, 242, 340, and 342; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

647 Ceramic Art History U G 5
Slide lectures; designed specifically to give the student a potter an understanding of historical forms and technical processes; presented in chronological sequence.
Sp Qtr. 5.2-hr cl. Prereq: 240, 242, 340, and 342; or permission of instructor.

661 Expanded Arts II U G 5
A creative and conceptual multimedia exploration of the various aspects of reflection, situation art, and space; introduction of alternatives in medium, technique, and product.
Prereq: Jr standing or permission of instructor.
661.01 Aspects of Reflection
Au Qtr. 6 studio hrs, 4 hrs arr.
661.02 Aspects of Situation Art
Wi Qtr. 6 studio hrs, 4 hrs arr.
661.03 Aspects of Space
Sp Qtr. 6 studio hrs, 4 hrs arr.
670 Advanced Drawing U G 5
Special problems in drawing, utilizing a wide range of media and methods and exploring a variety of materials in experimental approaches to drawing. 
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 274. Repeatable to a maximum of 20 cr hrs.

673 Advanced Painting U G 5
Su, Au, Wi, Sp Qtrs. 32-hr labs, 9 hrs arr. Prereq: 573. Not open to students with 20 cr hrs in 673. Each decimal subdivision repeatable to a maximum of 20 cr hrs.

673.01 Special Topics
Special topics in painting with a wide emphasis upon current directions, new media, and techniques; lectures, discussions, and field trips.

673.02 Visiting Artists
A visiting artist will lead selected research problems in painting; lectures, discussions, and field trips.

673.03 Special Problems in Abstraction
Research problems in abstract painting with a wide emphasis upon abstract and/or non-representational painting; lectures, discussions, and field trips.

673.04 Special Problems in Landscape
Research problems in landscape painting with a wide emphasis upon the environment as source material for painting; lectures, discussions, and field trips.

673.05 Special Problems in the Figure
Research problems in figure painting using life and clothed models; advanced problems using figure groups, lectures, discussions, and field trips.

673.06 Special Problems in Painting: Conceptual Approaches
Conceptual and theoretical approaches to painting will be emphasized; lectures, discussions, and field trips.

675 Photomechanical Printmaking U G 5
Intensive exploration of photomechanical reproduction technology utilized by the printing industry and the aesthetic of the photographic image as a tool for the art student. 
Wi, Sp Qtrs. 2 21/2-hr labs, 21/2-hr labs, 7 hrs arr. Prereq: 377 or 378 or 379, and written permission of instructor. Not open to students with 15 cr hrs in 686. Repeatable to a maximum of 15 cr hrs.

676 Advanced Relief Printmaking U G 5
An intensive exploration of the relief processes as a means for individual expression. 
Au, Wi Qtrs. 2 3-hr labs, 7 hrs arr. Prereq: 377 or 378 or 379 or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

677 Advanced Serigraphy U G 5
An intensive exploration of the serigraphic processes as a means for individual expression. 
Au, Sp Qtrs. 2 2-hr labs, 5 hrs arr. Prereq: 377 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

678 Advanced Intaglio U G 5
An intensive exploration of the intaglio process as a means for individual expression. 
Au, Wi, Sp Qtrs. 2 2-hr labs, 5 hrs arr. Prereq: 378 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

679 Advanced Lithography U G 5
An intensive exploration of the lithographic processes as a means for individual expression. 
Au, Wi, Sp Qtrs. 2 2-hr labs, 5 hrs arr. Prereq: 379 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

687 Fourth Year Sculpture Class U 5
Study of sculptural processes, concepts, and self analysis as an artist. 
Au, Wi, Sp Qtrs. 5 2-hr labs, 5 hrs arr. Prereq: 587.03. Open only to students specializing in sculpture.

687.01 Part 1

687.02 Part 2
Prereq: 687.01.

687.03 Part 3
Prereq: 687.02.

690 Imagemakers’ Seminar U G 3 or 5
Advanced group investigation of individual photographic projects with weekly critique sessions. 
Au, Wi, Sp Qtrs. 3-2-hr cl. Prereq: 25 hrs of photography course work and permission of instructor. Repeatable to 20 hrs including cr hrs earned in Photog 692 and 696.

691 Studio Practice II U G 2-5
Advanced studio practice beyond 591. 
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. The following decimal subdivisions, with the exception of 691.12, are open only to seniors or graduate students majoring in art. Each decimal subdivision repeatable to a maximum of 20 cr hrs, with the exception of 691.06, which is repeatable to a maximum of 20 cr hrs including cr hrs earned in Photog 691.

691.03 Ceramics
691.04 Glass
691.05 Photography
Arr. Prereq: Written permission of instructor.

691.06 Printmaking

691.09 Drawing
Prereq: Grad standing or 10 cr hrs in 673, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with successful review by the area faculty and a completed, signed ISA form.

691.10 Painting
Prereq: 670 or grad standing, and submission of 10-15 drawings/paintings on Advising Day previous to the intended qtr of study; open only to students with a successful review by the area faculty and a completed, signed ISA form.

691.11 Sculpture
691.12 Expanded Arts
691.13 Art Critical Practices
Advanced studio practice in art critical practices area, work developed through sustained contact with independent study adviser chosen from ACP faculty and adjunct faculty.

691.55 Art and Technology
Advanced studio practice.

693 Individual Studies U G 2-5
Advanced study for students in specialized programs. 
Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 20 cr hrs. These courses are graded S/U.

693.05 Photography
693.10 Painting
693.11 Sculpture
693.12 Expanded Arts

694 Group Studies U G 2-5
Group studio for students in specialized programs. 
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 15 cr hrs.

694.01 General
694.03 Ceramics
694.05 Photography
694.06 Printmaking
694.09 Drawing
694.10 Painting
694.11 Sculpture
694.12 Expanded Arts

695 Topics in Photographic Production U G 3 or 5
Selected topics in photographic production, including formal lectures and demonstrations pertaining to current photographic research by faculty and visiting artists; topics vary.

695.02 Zone System
History, theory, and mechanics: application of sensitometry in black and white film; its impact on the students' personal work
Wi Qtr. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 522.

695.03 Studio Work and Studio Lighting
Introduction to lighting equipment, principles, and techniques as applied to constructed/directed photography done predominantly in the studio environment.
Wi Qtr. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 523 or 529.

695.04 Social/Documentary Photography
Advanced production course with emphasis on the conceptual framework underpinning the documentary tradition in historical and contemporary photography.
Sp Qtr. Prereq: 401 or 503, and written permission of instructor. Not open to students with credit for Photog 685.64.

695.05 Bookmaking
Exploration of the history and aesthetics of photographic books with emphasis on structure, image sequence, and the relationship of images and text.
Au Qtr. Prereq: 401 or 503, and written permission of instructor.
695.06 Alternative Processes
Advanced production and study of alternative processes in photography through the production of a cohesive body of work.
Au Qtr. Prereq: 524, 695.02, and written permission of instructor. Not open to students with credit for Photog 695.07.

695.08 Alternative Photographic Systems
Advanced production course exploring alternative imaging systems such as pinhole cameras, inexpensive plastic cameras, polariod cameras, etc.
Sp Qtr. Prereq: 401 or 503, and written permission of instructor. Student will make or supply alternate imaging system or camera.

695.09 Special Topics
Open topic that takes into consideration the research interests of current faculty or visiting artists.
Wi Qtr. Prereq: 401 or 503, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

696 Senior Exhibition U 2
Required exhibition of studio work by seniors in BFA programs, accompanied by development of a portfolio of work and an artist's statement; independent study tutorial.
Su, Au, Wi, Sp Qtrs. 1-3 hr cr. Prereq: Jr or Sr standing in art or permission of instructor. Normally to be taken within the final two qtr's of study. GEC third writing course.

698 Study Tour U G 1-5
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign

H763 Honors Research U 3-5
A research investigation resulting in a senior honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a 3.00 GPA in an art specialization, permission of instructor under whose supervision the work is to be completed, and the College of the Arts Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

891 Studio Practice III G 2-5
Graduate-level studio practice.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in art or permission of instructor. Each decimal subdivision repeatable to a maximum of 45 or hrs. For credits.

891.03 Ceramics
891.04 Glass Art
891.05 Photography
891.06 Printmaking
891.09 Drawing
891.10 Painting
891.11 Sculpture
891.12 Art and Technology
991.13 Art Critical Practices

893 Individual Studies G 1-5
Su, Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 20 or hrs. These courses are graded S/U.

893.03 Ceramics
893.05 Photography
893.06 Printmaking
893.10 Painting
893.11 Sculpture
893.12 Expanded Arts

894 Group Studies G 1-5
Group studies for students in specialized programs.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Each decimal subdivision repeatable to a maximum of 15 or hrs.

894.03 Ceramics
894.05 Photography
894.06 Printmaking
894.10 Painting
894.11 Sculpture
894.12 Expanded Arts

895 Seminar in Studio Art G 2
Presentations by students, faculty, and visiting artists, with critical discussion emphasizing contemporary issues.
Au, Wi Qtr's. 1-2 hr cr. Prereq: Grad standing. Repeatable to a maximum of 8 cr hrs.

896 Graduate Teaching Seminar G 2
Exercises and discussions exploring techniques used in organizing, presenting, and evaluating materials taught in studio art classes with special reference to the Foundation Program.
Au Qtr. 1-2 hr cr. Prereq: Permission of instructor and grad standing in studio art.

991 Studio Practice IV G 2-5
Advanced graduate studio practice.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in art or permission of instructor. Each decimal subdivision repeatable to a maximum of 45 or hrs.

991.03 Ceramics
991.04 Glass Art
991.05 Photography
991.06 Printmaking
991.09 Drawing
991.10 Painting
991.11 Sculpture
991.12 Art and Technology
991.13 Art Critical Practices

999 Research in Art G Arr
Research for thesis and dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Art Education

340 Hopkins Hall, 129 North Oval Mall, 292-7183

160 Art and Music since 1945 U 5
A survey of the visual arts and music in the western world since 1945, based on live and recorded performances and exhibitions.
Su, Au, Wi, Sp Qtrs. 2.2 hr cr, 1 hr rec. Not open to students with credit for Arts Col 160. GEC arts and hums VPA course. VPA Admis Cond course.

225 Introduction to Art Education U 5
Ideas, issues, and career possibilities in art education explored through readings, dialogue, and site visitations.
Au, Wi Qtrs. 2.2 hr cr.

252 Introduction to the Computer in the Visual Arts U 5
Introductory study of computer graphics in relation to the traditional visual arts and as a distinct art form; computer will be used to produce imagery.
Au, Wi, Sp Qtrs. 2.2 hr cr, 4 lab hrs arr. Prereq: 160, Art 182 or Arts Col 160 or hist art courses which satisfy the visual and/or performing arts requirement of the GEC or permission of instructor. GEC arts and hums VPA course.

352 Fundamental Three-Dimensional Computer Art Techniques U 5
An introductory study of three-dimensional computer art techniques; three-dimensional still and animated imagery will be produced.
Au, Wi, Sp Qtrs. 2.2 hr cr, 4 lab hrs arr. Prereq: 252.

367 Second Writing Course U 5
Au, Wi, Sp Qtrs. 2.2 hr cr. Prereq: English 110 or 111 or equiv, and soph standing.

367.01 Ethnic Arts: A Means of Intercultural Communication
A study of the arts, the artworks, and the art worlds from diverse ethnic cultures in North America. Prerequisite: 367.01 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 367. GEC second writing, arts and hums VPA, and social diversity course.

367.02 Writing Art Criticism
Writing critically about contemporary American art by a variety of artists with diverse points of view. Barnett.

4851 Topics in Contemporary Art for Art Educators U 3
An undergraduate seminar dealing with aspects of contemporary art with emphasis on its relationship to art education theory and practice. Arnold.
Au Qtr. 3 cr. Prereq: Jr standing in art educ.

493 Individual Studies U 1-5
Individual studies and project work in specialized problems of the field of art education.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
559 Internship in Art Education U G 1-15
Students intern at non-public school sites to synthesize and apply what they have learned in the classroom through concentrated practice in the field.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Completion of all other program requirements. Repeatable to a maximum of 15 cr hrs. This course is graded S/N.

595 Seminar on Topical Issues in Art Education I U G 1-5
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 120 or 600. Repeatable to a maximum of 15 cr hrs.

600 Art for Elementary Teachers U G 3
Problems of teaching in terms of personal knowledge about art, insight into children's art work, and understanding of elementary school curriculum.
Su, Sp Qtrs. 3 2-hr labs. Prereq: 160 or Arts Col 160 or 5 cr hrs of course work in art or art educ or hist art.

601 Curriculum Design for Art History U G 3
Examination of art history concepts and processes to plan K-12 school curricula. Chanda.
Sp Qtr. 2-2 hr cl. Prereq: 160 or Arts Col 160, 488 or 607, and 10 cr hrs of hist art course work; or permission of instructor.

603 History and Philosophy of Art Education U G 5
History of the field with emphasis on major ideas in philosophy and learning theory that affect current trends.
Au Qtr. 3 2-hr cl. Prereq: 225. Not open to students with credit for 330.

604 Teaching of Studio Activities U G 5
Exploration of instructional application of various art materials for educational settings. Walker.
Au Qtr. 2 3-hr labs. Prereq: 225. Not open to students with credit for 445. Open to art ed majors only.

605 Social and Cultural Factors in Art Education U G 5
Investigation into the role of culture, social class, gender, and age in understanding art and the diverse audiences served by art education.
Au Qtr. 3 2-hr cl. Prereq: 225. Not open to students with credit for 375.

606 The Computer in Art Education: A Survey Course U G 5
A survey and practical course, exploring the implications and potential of the computer in a variety of art education contexts and roles.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 350 or 603, and 445 or 604.

607 Concepts in Planning Art Education U G 5
Planning for and management of the social and physical environment of art education.
Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 375 or 605. Not open to students with credit for 488.

608 Art Education for Children with Special Needs U G 5
Strategies that can be used in teaching art to students with special needs and lesson planning for inclusion.
Wi Qtr. 3 2-hr cl. Prereq: 375 or 605. Not open to students with credit for 588.

635 Photographic Criticism U G 3
Readings, lectures, and discussions dealing with the study and practice of photographic criticism to facilitate and enrich the understanding of criticism and photography. Barrett.
Sp Qtr. 2 2-hr cl. Prereq: 654, or Photog 660 or 521, or permission of instructor.

640 Critical Dialogue about Art and Aesthetics U G 5
Theory and practice of engaging others in informed discussion of works of art. Barrett.
Sp Qtr. 2 2-hr cl. Prereq: 603 or 635 or permission of instructor.

652 Computer Graphics in the Arts and Education U G 3
Application of computer imaging for the arts and interactive educational programs.
Wi Qtr. 1 3-hr cl. Prereq: Sr or grad standing.

655* Content and Structure in Arts Education U G 3
Students from art, dance, music, and theatre education engage in dialogue, research, and peer teaching focusing upon the educational content and structure of each discipline.
Sp Qtr. 1 2 1/2-hr cl. Open only to majors in art, dance, music, and theatre education and to grad students seeking certification. Not open to students with credit for Music 665. Cross-listed in Music.

670 Public Policy and the Arts U G 3
Issues in arts policymaking as they affect community arts services.
Au Qtr. 1 2 1/2-hr cl.

671 Role of the Community Arts Administrator U G 3
The administrative role in economic development, human resource development, and organizational development in the arts.
Sp Qtr. 1 2 1/2-hr cl, arr. Prereq: 670 or permission of instructor.

672 Planning for Community Arts Services U G 3
Grantmanship, fundraising, marketing, and public relations. Lawson.
Wi Qtr. 1 2 1/2-hr cl. Prereq: 671 or permission of instructor.

673 Issues across the Arts U G 3
A visiting lecturer series facilitates the in-depth exploration and analysis of a quarterly selection of related arts policy, programming, and funding issues.
Sp Qtr. 1 3-hr cl. Prereq: 670 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

680** Aesthetics in Art Education U G 3
Concepts and strategies for including aesthetics in art education curricula.
Sp Qtr. 2 1 1/2-hr cl. Prereq: 486 or 607 or grad standing.

688 Instructional Applications in Art U G 5
Preparation for art instruction through curriculum development, study of instructional strategies, and peer teaching.
Su Qtr. 3 2-hr cl. Prereq: 586 or 608 or equiv. Open only to art educ majors. Repeatable to a maximum of 10 cr hrs.

689 Laboratory Field Experience U G 5
Planning, teaching, and evaluation of a unit of instruction for implementation in an art program serving the community.
Au Qtr. 1 2-hr cl, 1 6-hr lab. Prereq: 688 and permission of instructor. Open only to art educ majors. Repeatable to a maximum of 10 cr hrs.

691 Applied Research in Art Education U G 2-5
Studies in empirical, philosophical, curriculum, or studio problems in art education.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

693 Individual Studies U G 1-15
Advanced study for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

694 Group Studies U G 2-5
Group studies for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

700 Issues in Graduate Study in Art Education U G 3
Overview of topics in theses and dissertation research, graduate faculty research, national and international issues, and university resources and policies.
Su, Au Qtrs. 1 3-hr cl. Prereq: Grad standing. Must be taken during the first year of graduate study in the major.

701 Seminar on Art History in Art Education U G 3
An examination of art history structures, concepts, and research methods for translation into alternative education methods for teaching art history in K-12 settings.
Sp Qtr. 1 3-hr cl. Prereq: 601 and any 500- or 600-level course in history of art; or permission of instructor.

705 Overview of Research Methods in Art Education U G 5
Introduction to a wide range of methods applicable to art education research problems, including historical, philosophical, ethnographic, survey, experimental, and case study methods.
Au Qtr. 2 2-hr cl. Must be taken during the first year of graduate study in the major.

720 Philosophy of Art Education Literature Survey U G 3
Discussion of writings by art educators, aestheticians, artists, critics, and others for historical perspective on and to distinguish the nature of philosophy of art education.
Wi Qtr. 3 cl.

731 Evaluation in Art Education U G 3-5
Evaluation of student performance in art; informal instruments for collecting data for use in assessing programs.
Wi Qtr. 2 2-hr cl. Prereq: 807 or equiv with written permission of instructor.
Art Education

753 Aesthetics of Interactive Technology G 5
Aesthetic and critical investigations of the impact of interactive technologies on artmaking and art education. Gigliotti.
Au Qtr. 1 1-hr cl. 1 2-hr lab. Prereq: Grad standing. Repeatable to a maximum of 10 cr hrs.

7651* Contemporary Art and Art Education G 3
A study of recent developments in contemporary art and the implication of those developments on art education practice and curriculum design. Arnold.
Au Qtr. 4 cl. Prereq: Written permission of instructor.

767 Critical Analysis of Multicultural Art Education: Theory and Practice G 5
Investigation and analysis of multicultural theories and issues for art education.
Au Qtr. 2 1/2-hr cl. Prereq: Permission of instructor.

775 Social and Cultural Theories in Art and Art Education G 3
Critical examination of the relationships between and among artists and art worlds of various societies and cultures.
Wi Qtr. 1 1-hr cl. Prereq: Permission of instructor.

776 Workshop in Art Education U G 1-5
Small group demonstrations of trends, processes, and teaching materials for curriculum development in art education; preparation of study materials for teaching art.
Su, Au, Wi, Sp Qtr. Prereq: 200 or equiv and permission of instructor. Repeatable to a maximum of 15 cr hrs.

778 Honors Research U 3-5
A program of reading and research arranged for each student, with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtr. Arr. Prereq: 4th yr standing with a pt-hr ratio of 3.50 in the major area and permission of instructor under whose supervision the work is to be completed and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. Satisfactory completion of at least 9 cr hrs is required of candidates for an undergraduate degree with distinction in art education. This course is graded S/U.

786 Student Teaching in Art in Elementary Schools G 12
Field-based teaching experience at the elementary level integrating theory, research, and practice. Short.
Wi, Sp Qtr. 30 hrs/wk on site. Prereq: 689, 705, and permission of instructor; concurs: 788.01. This course is graded S/U.

787 Student Teaching in Art in Secondary Schools G 12
Field-based teaching experience at the secondary level integrating theory, research, and practice. Short.
Wi, Sp Qtr. 30 hrs/wk on site. Prereq: 689, 705, and permission of instructor; concurs: 788.02. This course is graded S/U.

788 Teaching and Research Seminar G 3
Projects and discussions related to current topics and issues in the theory, research, and practice of art teaching in schools. Short.
Wi, Sp Qtr. 1 3-hr cl. 788.01 Elementary Prereq: 705; concurs: 788.03. 788.02 Secondary Prereq: 705; concurs: 787.

795 Seminar on Topical Issues in Art Education II G 1-5
Su, Au, Wi, Sp Qtr. Arr. Prereq: 15 cr hrs in art education or permission of dept. Repeatable to a maximum of 15 cr hrs.

805 Empirical Problems in Art Education G 3-5
An introduction to the language, methodology, and application of empirical research in art education; the identification and isolation of appropriate empirical problems in this field. Kozicki.
Wi Qtr.

807 Curriculum Problems in Art Education G 3-5
An examination of the functions of curricular plans as tools for transforming selected conceptions of art education into teacher and student activities in the classroom.
Wi Qtr.

830 Seminar in the History of Art Education G 5
Examination of interpretative perspectives in the history of art education; classification of primary and secondary sources, and their use in historical research. Elland.
Sp Qtr. 2 1/2-hr cl. Prereq or concurs: 705, or permission of instructor.

875 Social and Cultural Research Methods for Art Education G 5
Social and culturally based research methods for studying the art of diverse groups of people.
Sp Qtr. 2 1/2-hr cl. Prereq: 705 or permission of instructor.

889 Internship in Arts Administration G 4-16
Supervised administrative experience within a performing or visual arts agency/organization; depending on the organization's needs, assignments may include grantwriting, fundraising, exhibition design, etc.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs.

893 Individual Studies G 1-15
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

894 Group Studies G 1-5
Group studies for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

911 Research Problems in Art Education G 3-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

998 Research in Art Education: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research in Art Education: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Arts and Sciences

Denney Hall, 164 West 17th Avenue, 292-6961

100 Arts and Sciences Survey U 1
Academic requirements; University procedures, grading system, resources; student rights and responsibilities; overview of Arts and Sciences academic areas of study and services.
H100 (honors) may be available to students in the Arts and Sciences Honors Program or by permission of ASC honors director. Prereq: Enrollment in the Colleges of the Arts and Sciences. Not open to students with credit for Art Int 100, Arts Col 100.01 or 100.02, Engineer 100, or any decimal subdivision of UWC 100. This course is graded S/U.

101 First- or Second-Year Seminar U 1
Seminars on varying topics taught by University faculty. H101 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: Fr or soph standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Interdisciplinary Group Studies U 1-5
Study of special or interdisciplinary topics at an introductory level.
H294 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Open to students who meet instructor's stated prereqs. Repeatable to a maximum of 15 cr hrs.

298 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
298.01 Domestic
298.02 Foreign

400 Career Planning Seminar U 1
Discussion of careers for liberal arts majors; employment trends; effective job search strategies, resumes, vitae, and cover letter preparation; graduate and professional school opportunities; interviewing techniques.
Wi, Sp Qtrs. 2 cl. These courses are graded S/U.

400.01 General
H400.01 (honors) may be available to students in the ASC Honors Program and by permission of instructor. Prereq: 400.01, Soph or Jr standing. H400.01: Jr standing in ASC Honors Program and permission of instructor. Not open to srs except by permission of instructor, or to Capital program students, or to students with credit for 400.02.

400.02 Capital Program
Prereq: Soph or Jr standing in Capital program. Not open to srs except by permission of instructor, or to students w/ credit for 400.01.

489 Professional Practice
Su, Au, Wi, Sp Qtrs. Arr.

489.01 Credit Cooperative Education Program U 2
Employment through the Cooperative Education program conducted under the supervision of an ASC faculty member; midterm and comprehensive final reports required.
Prereq: Registration with the co-op education program, minimum cumulative pt-hr ratio of 2.50, Soph standing or above, completion of credit co-op education agreement form with instructor under whose supervision the work is to be completed, and permission of the director of co-op education. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.
489.02 Noncredit Cooperative Education Program U 0
A cooperative education or internship assignment conducted under the supervision of the employee; monitoring and evaluation by the director of the co-op program.
Prereq: Permission of the director of the co-op education program. Repeatable to a maximum of 5 times. This course is graded S/U.

496 Study at a Domestic Institution U 1-15
An opportunity for students to study at a domestic institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as travel and subsistence costs.

Arts, College of the
152 Hopkins Hall, 128 North Oval Mall, 292-2298

100 Arts Survey U 1
Academic requirements; University procedures, grading system and resources; student rights and responsibilities; overview of Arts' academic areas of study and services.
Prereq: Direct Enrollment into the College of the Arts. Not open to students with credit for Arts&Soc 100 or UVC 100.
100.01 Pre-Arts
100.02 Arts

Art and Music since 1945
See Art Educ 160.

Dance and Theatre, 1945 to the Present
See Dance and Theatre 161.

294 Group Studies U 1-5
Interdepartmental course involving studies in two or more areas of the visual and performing arts.
Prereq: Permission of dean. Repeatable to a maximum of 16 cr hrs.

494 Group Studies U 1-5
Group studies in selected interdisciplinary areas in the arts.
Arr. Prereq: Jr standing or above, and permission of instructor. Repeatable to a maximum of 15 cr hrs.

693 Individual Studies U G 2-5
Advanced studies for students engaged in interdisciplinary investigations within the College of the Arts.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Interdepartmental course involving studies in two or more areas of the visual and performing arts.
Prereq: Permission of dean. Repeatable to a maximum of 16 cr hrs.

790 Interdisciplinary Research Seminar in Computer Technology in the Arts G 5
Interdisciplinary investigations in artmaking and industrial and instructional design through the use of computer technology.
Au, Wi, Sp Qtrs. 2-3 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Astronomy
4055 McPherson Laboratory, 140 West 15th Avenue, 292-1773

161 Introduction to Solar System Astronomy U 5
Physical nature of the sun and its family of planets, satellites, comets and minor bodies; gravitation, light, and telescopes.
Su, Au, Wi, Sp Qtrs. 5 cr or 3 1 1/2-hr cl. H161 (honors) may be available. Wi Qtr to students enrolled in an honors program or by permission of dept.
Prereq: Math 075 or 076 or 102, or Math Placement Level R. Prereq for H161: Math 116 or 148. Not open to students with credit for 150, 171, or 191. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admins Cond course.

162 Introduction to Stellar, Galactic, and Extragalactic Astronomy U 5
Structure, motions, and evolution of stars, interstellar material, galaxies, and the universe as a whole.
Su, Au, Wi, Sp Qtrs. 5 cr or 3 1 1/2-hr cl. H162 (honors) may be available. Sp Qtr to students enrolled in an honors program or by permission of dept.
Prereq: 101 or 181, Prereq for H162: 181 or 191, and Math 116 or 148. Not open to students with credit for 150, 172, or 192. Not intended for ASC BS students. Not recommended for students who plan to continue in astronomy or physics. This course is available for EM credit. GEC phys sci course. NS Admins Cond course.

H1831 Relativity and Cosmology U 5
Origin and evolution of the Universe, based on the Theory of Relativity, including the Big Bang, cosmic microwave background, formation of cosmic structure, dark matter.
Sp Qtr. 5 cr. Prereq: 192 and enrollment in an honors program; or permission of dept. GEC phys sci course.

171 Solar System Astronomy U 5
Development of astronomy and astrophysics; nature of the solar system, including planets, satellites, comets, asteroids, and the solar atmosphere.
Wi Qtr. 5 cr. Prereq: Math 150. Not open to students with credit for 161. GEC phys sci course.

172 Stellar, Galactic, and Extragalactic Astronomy U 5
Structure and evolution of stars, interstellar medium, galaxies, and the universe.
Sp Qtr. 5 cr. Prereq: 171. Not open to students with credit for 162. GEC phys sci course.

291 Basic Astronomy and Planetary Astronomy U 5
Motion and physical nature of objects in the solar system; electromagnetic radiation, telescopes, and astronomical detectors.
Au Qtr. 5 cr. Prereq or concur: Physics 133; or permission of instructor. Not open to students with credit for 191. Intended only for BS students. This course is available for EM credit.

292 Stellar, Galactic, and Extragalactic Astronomy and Astrophysics U 5
Observational and physical properties of the sun and stars; stellar structure and evolution; interstellar medium; galaxies and cosmology.
Wi Qtr. 5 cr. Prereq: 291 or permission of instructor. Not open to students with credit for 192. This course is available for EM credit.

294 Group Studies U 1-6
Special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

3501 Methods of Astronomical Observation and Data Analysis U 5
Astronomical observational techniques and quantitative analysis of astronomical data; practical experience with modern astronomical instrumentation and computer-based reduction, analysis, and interpretation of astronomical data.
Au Qtr. 3 cr; 1-2-hr lab plus independent observation. Prereq: 150 or 162 or 192 or 292, Math 153, and Physics 133. GEC data analysis course.

640* Stellar Astronomy U 4
Distances, luminosities, radii, temperatures, and masses of stars; the distribution and motion of stars; interstellar matter; and galactic dynamics.
Au Qtr. Prereq: 192 or 292, Math 254, and Physics 133; or permission of instructor. Not open to students with credit for 50.

681* Principles of Stellar Evolution and Nucleosynthesis U 5
Physics of stellar structure, evolution, and nucleosynthesis.
Wi Qtr. 5 cr. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for 641 or 651, or Physics 681. Cross-listed in Physics.

8281* Introduction to Cosmology U 5
Structure and evolution of the Universe.
Wi Qtr. 5 cr. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for 642 or Physics 681. Cross-listed in Physics.

593 Individual Studies U G 1-15
Independent study or laboratory work on a special problem in observational or theoretical astronomy.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 80 cr hrs. This course is graded S/U.

594 Group Studies U G 1-6
Special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
Astronomy

H783 Honors Research U 3-5
A program of study arranged for each student, with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the astros courses taken, with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 8 crs are required of candidates for the degree BS with distinction in astron. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

820 Radiation Measurements G 3
Techniques for obtaining and interpreting measurements of radiation from astronomical sources.
Au Qtr. 3 cr. Prereq: Permission of instructor.

8221 Electromagnetic Radiation G 3
Continuous radiative processes of astrophysical interest.
Au Qtr. 2 1 1/2-hr cr. Prereq: Physics 656 or permission of instructor.

8231 Theoretical Spectroscopy G 3
Theory of atomic spectra, including radiative and collisional processes for line formation by atoms, ions, and molecules in plasmas.
Au Qtr. 3 cr or 2 1 1/2-hr cr. Pre req: Physics 532 or 632 or permission of instructor.

8251 Radiative Gas Dynamics G 3
Dynamics of gas flows in astrophysical situations, including stellar winds, accretion, shock waves, and jets.
Wi Qtr. 3 cr or 2 1 1/2-hr cr. Pre req: Physics 621 or permission of instructor.

8301 Properties of Stars and Galaxies G 3
Observe star properties and regular galactic stars (non-active) galaxies.
Wi Qtr. 3 cr. Pre req: Physics 540 and Physics 533 or 633 or 706, or permission of instructor.

8311 Stellar Interiors G 3
Theoretical aspects of the interiors and evolution of single stars.
Sp Qtr. 3 cr. Pre req: Physics 641, Math 255 and 551, and Physics 533 or 633 or 706, or permission of instructor.

8321 Stellar Atmospheres G 3
Theory of the atmospheric structure of stars, emphasizing spectral line formation.
Wi Qtr. 3 cr or 2 1 1/2-hr cr. Pre req: Physics 641, Math 255 and 551, and Physics 533 or 633 or 706, or permission of instructor.

8351Observed Properties of Stars G 3
Photometric and spectroscopic observations of stars, including infrared and ultraviolet wavelengths; observations of intrinsic variable stars.
Wi Qtr. 2 1 1/2-hr or 3 cr. Pre req: 830 or permission of instructor.

850 Current Topics in Astronomy G 1-5
Staff members and visiting lecturers present material on their current research problems.
Au, Wi, Sp Qtrs. Pre req: 10 cr hrs at 600 level or higher in each of astron, physics, and Math; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

868 Galactic Astronomy G 3
Structure and kinematics of the Galaxy.
Wi Qtr. 3 cr. Pre req: Physics 540 and Physics 533 or 633 or 706, or permission of instructor.

8691 Active Galaxies and Observational Cosmology G 3
Properties of active galactic nuclei and quasars, the cosmological distance scale, and observational tests of cosmological models.
Sp Qtr. 3 cr or 2 1 1/2-hr cr. Pre req: Permission of instructor.

8701 Interstellar Medium G 3
Physical processes occurring in interstellar gas and dust.
Sp Qtr. 3 cr or 2 1 1/2-hr cr. Pre req: 625 or permission of instructor.

8703 Cosmology G 3
Structure and evolution of the Universe; physical processes in the Big Bang.
Au Qtr. 3 cr. Pre req: Permission of instructor.

880 Directed Research G 3
Participation by the student in the research being conducted by a professor.
Su, Au, Wi, Sp Qtrs. Pre req: Written permission of instructor. Repeatable to a maximum of 12 cr hrs only under supervision of different faculty members. This course is graded S/U.

894 Group Studies G 1-5
Special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

999 Research in Astronomy and Astrophysics G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Atmospheric Sciences

1036 Derby Hall, 154 North Oval Mall, 282-2514

230 Basic Meteorology U 5
Introduction to the underlying physics of the atmosphere; basic equations of thermodynamics, radiation, and dynamics are presented and used to explain selected atmospheric phenomena.
Au Qtr. 5 cr. Pre req: Math 152 and Physics 132.

General Meteorology
See Physics 503 — A description of weather phenomena and the physical processes underlying them; intended primarily for nonphysics majors.

Climatology
See Geog 500 — The elements and the controls of climate; types of climate and their distribution; climates and their effects on the economic and other activities of man.

620 Synoptic Meteorology Laboratory U G 3
Introduction to reading and interpretation of synoptic weather maps and data-communication systems.
Au Qtr. 2 cr, 1 lab hr. Pre req or concur: 230 or Geog 620. Not open to students with credit for Geog 620. Cross-listed in Geography.

Microclimatology: Boundary Layer Climatology
See Geog 622.01 — Theory of exchanges of energy and mass at the earth-atmosphere interface as it relates to microclimates with particular emphasis upon radiation and climate.

Microclimatologial Measurements
See Geog 522.02 — Practical experience in the fabrication of instruments, deployment of measurement systems in the field and recording of data related to microclimates.

Synoptic Meteorology: Synoptic Analysis and Forecasting
See Geog 623.01 — Theory and practice in synoptic weather analysis and forecasting.

Synoptic Meteorology: Severe Storm Forecasting by Radar and Satellite
See Geog 623.02 — The theory and application of radar and satellite imagery in weather forecasting; emphasis on severe thunderstorms, tornadoes, and hurricanes; analysis of their evolution and structure.

631 Atmospheric Thermodynamics U G 5
An analysis of the fundamentals of atmospheric thermodynamics and their application to meteorological problems.
Au Qtr. 5 cr. Pre req: Math 153.

637 Dynamic Meteorology I U G 5
Fundamental problems in dynamic meteorology; components of the equations of atmospheric motion are derived, and vorticity and divergence in the development of meteorological systems.
Wi Qtr. 5 cr. Pre req: 631 or Aero Eng 605, and Math 415.

638 Dynamic Meteorology II U G 5
Advanced problems in dynamic meteorology; use of the equations of motion in numerical models of the atmosphere, especially those used by the National Weather Service.
Sp Qtr. 5 cr. Pre req: 637 or Aero Eng 765.

693 Individual Studies in Atmospheric Sciences U G 1-5
Independent studies on selected atmospheric sciences related topics.
Su, Au, Wi, Sp Qtrs. Pre req: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies in Atmospheric Sciences U G 1-5
Special studies on topics directly related to the atmospheric sciences.
Su, Au, Wi, Sp Qtrs. 3 cr. Pre req: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

Fundamentals of Atmospheric Dynamics
See Aero Eng 765 — Advanced level treatment of basic topics in the dynamics and thermodynamics of atmospheric motion.
Dynamic Climatology
See Geog 821—Dynamics, thermodynamics, energy conservation, flows, conversion processes; large scale circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather processes, and regional climates.

Microclimatology
See Geog 822—Radiation and turbulence processes, conduction; variation wind, temperature, humidity, soil moisture, evaporation, soil temperature; influence of vegetation and artificial structures.

Applied Climatology
See Geog 823—Analysis of climatic and environmental change on various time scales; man's impact on climate; theory and application of long-range and climate forecasting.

881 Atmospheric Sciences Seminar G 2-4
A multidisciplinary seminar reviewing selected topics in atmospheric sciences and related fields.
Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

893 Individual Studies in Atmospheric Sciences G 1-5
Reviews the state-of-the-art of selected topics in the atmospheric sciences-related fields of meteorology and climatology, air environment studies, or aeronomy and solar-terrestrial relations.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

894 Group Studies in Atmospheric Sciences G 1-5
Advanced studies on topics directly related to the atmospheric sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

999 Research in Atmospheric Sciences G Arr
Research for thesis or dissertation purpose only.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in atmos sc. This course is graded S/U.

Aviation
Aviation Building, 164 West 19th Avenue, 292-2405

294+ Group Studies in Aviation U 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

300 The National Aviation System U 3
A comprehensive survey of the national aviation system.
Au, Wi, Sp Qtrs. 2 cr or 1 3-hr cl.

310 Private Pilot Fundamentals U 5
Study of flight fundamentals, aircraft operation, weather, and regulations essential for the private pilot.
Su, Au, Wi, Sp Qtrs. 5 cr, or 1 2-hr cl and 1 3-hr cl. Prereq: Math 131, Physics 111.

322 Aviation History U 3
A survey of the evolution of aviation; emphasis on the development of the national aviation system and its social, economic, and political impact.
Sp Qtr. 2 cl, or 1 3-hr cl.

324+ Distinguished Aviation Lecture Series U 2
An overview of contemporary opportunities, challenges, and trends in aviation; invited presentations by distinguished guest speakers supplemented by faculty lectures.
Sp Qtr. 2 1-hr cl. Repeatable to a maximum of 6 cr hrs.

341 Private Pilot Flight Lab I U 2
Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to solo flight.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

342 Private Pilot Flight Lab II U 2
Laboratory course providing students an opportunity to learn the fundamentals of flight and airplane operation leading to Private Pilot certification.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 310 and 341. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

410 Aviation Weather U 3
Overview of weather theory; identification of aviation weather hazards and methods for obtaining current weather data.
Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 310.

411 Aircraft Performance U 3
Studies of airframe components, performance and design characteristics, power plants, and federal certification of aircraft.
Au Qtr. 3 cl or 1 3-hr cl. Prereq: 310 and Physics 111 or higher.

413 Commercial Pilot Fundamentals U 3
A study of high-performance airplane operational considerations, systems, and components and the Federal Aviation Regulations which govern the operations, privileges, and limitations of commercial pilots.
Wi, Sp Qtrs. 1 3-hr cl. Prereq: 410.

414 Flight Physiology U 3
An examination of the adverse effects of flight on human physiological functions, perceptions, and performance.
Au Qtr. 3 cl or 1 3-hr cl. Prereq: 310.

415 Instrument Flight Fundamentals U 3
Study of flight by reference to instruments, IFR regulations, and procedures in the national airspace system.
Au, Sp Qtrs. 3 cl or 1 3-hr cl. Prereq: 410.

417 Advanced Multiengine Operations U 2
The study of the principles of operation of the contemporary corporate airplane.
Wi Qtr. 1 2-hr cl. Prereq: 411.

418 Air Transport Operations U 3
Examination of the elements of airline transport operations and the functions of the aircraft dispatcher and flight engineer.
Sp Qtr. 1 3-hr cl. Prereq: 411 and 415.

421 Flight Instruction Methodology U 3
Principles of teaching aeronautical subjects.
Au Qtr. 1 3-hr cl. Prereq: 411, 413, and 415.

422 Instrument Instruction Methodology U 2
Principles of teaching instrument flight theory and requirements.
Sp Qtr. 1 2-hr cl. Prereq: 421.

441 Commercial Flight Lab 1 U 3
Development of commercial pilot skills and experiences, fundamentals of instrument flight.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 342. Obtain equipment usage charge and permission slip at Ohio State Airport prior to scheduling.

442 Commercial Pilot Flight Lab 2 U 3
Further development of commercial pilot skills and experience, completion of Instrument flight instruction.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 415 and 441. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

443 Commercial Pilot Flight Lab 2 3 U 3
Complex airplane (SEL) flight instruction.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 442. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

444 Commercial Pilot SEL Flight Lab 4 U 3
SEL commercial and instrument flight skills.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 413 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

445 Commercial Pilot SEL Flight Lab 5 U 3
Leads to SEL commercial certificate.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 444. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

446 Commercial Pilot MEL Flight Lab 4 U 3
Development of MEL commercial pilot flight skills; leads to multi-engine rating.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 415 and 443. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

447 Commercial Pilot MEL Flight Lab 5 U 3
Development of MEL instrument flight skills; leads to MEL instrument rating.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 446. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

461 Flight Instructor ASEL Flight Lab U 3
Development of skills and experience necessary for certification as flight instructor airplane SEL.
Su, Au, Wi, Sp Qtrs. 5 1-hr labs. Prereq: 421 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.
462 Flight Instructor Instrument Airplane Flight Lab U 3
Development of skills and experience necessary for flight instructor instrument rating.
Su, Au, Wi, Sp Qtrs. 5-1 hr labs. Prereq: 422 and 445 or 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

463 Flight Instructor AMEL Flight Lab U 3
Development of skills and experience necessary for airplane MEL rating.
Su, Au, Wi, Sp Qtrs. 5-1 hr labs. Prereq: 421 and 447. Obtain equipment usage charge and permission slip at University Airport prior to scheduling.

469 Professional Practice in Industry U 2
Actual employment in a co-op program in the aviation industry and the preparation of a report based on the work experience.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to co-op program in aviation and written permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

493 Individual Studies in Aviation U 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

510t The National Airspace System U 3
Overview of proposed national airspace system careers, implementation, airspace, facilities, safety, new electronic systems, economic, social, and political implications.
Au Qtr. 3-1 hr cl. Prereq: 415.

520 Aviation Communication U 3
Communication skills and theory for the aviation professional; includes pilot/ATC radio communications, public relations, organizational structure, and written and verbal reports.
Wi, Sp Qtrs. 3 cr or 1-3 hr cl. Prereq: 300, 310 and a second writing course. GEC/LAP course.

522t Principles of Aviation Organizations U 3
Applied study of communication in and the structure of aviation organizations: FBO, FAR 135, FAR 121, and Corporate.
Sp Qtrs. 3 cr or 1-3 hr cl. Prereq: 520.

530 Aviation Law U 3
Study of the legal system and the important legal concepts affecting aviation.
Au, Sp Qtrs. 3 cr or 1-3 hr cl. Prereq: 520.

532 Aviation Safety Investigation U 3
Functions of air safety investigation, aircraft accident reconstruction and investigation, aircraft accident prevention, and role of expert witness.
Sp Qtr. 1-3 hr cl. Prereq: 411.

540 Aviation Human Factors U G 3
An examination of human factors problems in aviation safety including aircraft design, aviation systems design, and human behavior.
Au, Sp Qtrs. 3 cr or 1-3 hr cl. Prereq: 310; 410 and 415 recommended.

550 Aviation Management U 3
A blend of accepted business procedures and practical techniques applied to aviation management; includes general aviation, airlines, airports, aircraft, and air traffic control.
Au, Sp Qtrs. 3 cr or 1-3 hr cl. Prereq: 300, 310 and Econ 200.

552 Airport Management U 3
Comprehensive study of airport operations and management; role of the airport manager in planning, finance, administration, public relations, social-political and environmental considerations, and operational requirements and maintenance.
Wi, Sp Qtr. 1-3 hr cl. Prereq: 550.

593 Individual Studies in Aviation U G 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

595t Senior Seminar U 2
Selected studies of theory and practice in aviation; topic varies quarterly.
Wi Qtr. 1-2 hr cl. Open only to aviation majors with 3.3 standing.

640 Man-Machine Simulation in Training and Engineering U G 3
An analysis of current research and problems in man-machine simulation of complex systems for training and research.
Sp Qtr. 3 cr or 1-3 hr cl. Prereq: 415 and 540.

650 Air Transportation Analysis U 3
Analysis and planning of air transportation systems; focus on air transportation supply and demand components, and examples from U.S. domestic and international airlines, passenger and cargo.
Au, Sp Qtrs. 3 cr or 1-3 hr cl. Prereq: 550 and Econ 400.

652 The International Aviation System U G 3
Overview of the international system: aeropolitical framework, air transport, navigation, and contemporary issues.
Wi Qtr. 3 cr or 1-3 hr cl. Prereq: 550.

654 Airline Marketing U G 3
Contemporary marketing concepts and procedures and their applications in the airline industry with emphasis on domestic and international passenger analysis and service planning.
Wi Qtr. 3 cr or 1-3 hr cl. Prereq: 550.

694 Group Studies in Aviation U G 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

Biochemistry

776 Biological Sciences Building, 484 West 12th Avenue, 392-6771

211 Elements of Biochemistry I U 3
A survey of biochemistry in a two-quarter sequence stressing the qualitative rather than the quantitative approach. Scott.
Au Qtr. 3 cr. Prereq: Chem 102 or 122. Credit does not count toward a major in Biochem. This course is available for EM credit.

212 Elements of Biochemistry II U 3
A continuation of 211.
Wi Qtr. 3 cr. Prereq: 211. Credit does not count toward a major in biochem.

294 Group Studies U 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for different subject matter only.

511 Introduction to Biological Chemistry U G 5
An introductory course in biochemistry dealing with the molecular basis of structure and metabolism of plants, animals, and microorganisms.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: Chem 123 or 242 or 252, and 2 qtrs of biological sciences. The organic chemistry requirement may also be satisfied by Chem 231 with a grade of at least C. This course is available for EM credit.

512 Biochemistry of Physiological Processes U G 5
The biochemical basis for physiological processes in higher animals; topics include digestion and absorption, respiration, blood function, kidney function, and endocrine control. Senf.
Sp Qtr. 5 cr. Prereq: 511 or equiv; a course in physiol recommended.

521 Introduction to Biological Chemistry: Laboratory U G 5
Assay techniques for chemical constituents and metabolic reactions of living cells.
Su, Au, Sp Qtrs. 2 cr, 2 3-hr labs. HS21 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq for 521: 511 or 613 or equiv. Prereq for HS21: 511 or 613 or equiv, and Chem 221.

613 Biochemistry and Molecular Biology U G 4
An introductory course in biochemistry and molecular biology developing in three quarters 3 the molecular basis of structure and function of living cells. Behrmann.
Au Qtr. 4 cr. Prereq: Chem 242 or 253, and 2 qtrs of biological sciences. Not open to students with credit for 511 without written permission of instructor. Not open to students with credit for 513. This course is available for EM credit.

614 Biochemistry and Molecular Biology U G 4
Continuation of 613. Behrmann.
Wi Qtr. 4 cr. Prereq: 613. This course is available for EM credit.

615 Biochemistry and Molecular Biology U G 4
Continuation of 614. Breitenberger.
Sp Qtr. 4 cr. Prereq: 614. This course is available for EM credit.

693 Individual Studies U 2-5 G 2-10
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrad credit and to a maximum of 40 cr hrs for grad credit. This course is graded S/U.

694 Group Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.
698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titles; study tours only.
698.01 Domestic
698.02 Foreign

702 Molecular Genetics: Regulation of Gene Expression U G 3
Transcription, translation, and regulation of gene expression in prokaryotes and eukaryotes; emphasis on concepts and experimental analysis of gene regulatory mechanisms. Mayruf.
Wi Qtr. 3 cl. Prereq: Mol Gen 701 or permission of instructor.

708 Protein and Enzyme Laboratory U G 5
Purification, characterization, and study of the physical and catalytic properties of enzymes and proteins. Swenson.
Wi Qtr. 3-4 hr labs. Prereq: 521 and 761; or equiv; or permission of instructor.

710 Molecular Biology Laboratory U G 5
Isolation of recombinant phage and phage DNA, subcloning of DNA fragments, restriction enzyme analysis, nucleic acid hybridization, RNA metabolism. Dean.
Sp Qtr. 3-4 hr labs. Prereq: 521 and 511 or 702; or equiv; or permission of instructor.

721 Physical Biochemistry U G 3
721.01 Physical Biochemistry I
Introduction to physical biochemistry with emphasis on biological applications; designed for students in the life sciences. Scott.
Au Qtr. 3 cl. Prereq or concur: 511 or 613, Math 153 (254 recommended), and Physics 113 or 133; or permission of instructor.

721.02 Physical Biochemistry II
A continuation of 721.01. Scott.
Wi Qtr. 3 cl. Prereq 511 or concur: 614 and 721.01; or permission of instructor.

721.03 Physical Biochemistry III
A continuation of 721.02. Scott.
Sp Qtr. 3 cl. Prereq: 721.02.

735 Plant Biochemistry I U G 3
The biochemistry of plant chloroplasts and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development. Sayre.
Au Qtr. 3 cl. Prereq: 511 or 614. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Pnt Bio 735. Cross-listed in Plant Biology.

736 Plant Biochemistry II U G 3
The biochemistry of plants with emphasis on the synthesis and structure of cell walls, lipids, secondary compounds, phytotoxins, and nitrogen fixation. Sayre.
Wi Qtr. 3 cl. Prereq: 735. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1988, or to students with credit for Pnt Bio 736. Cross-listed in Plant Biology.

761 Advanced Biochemistry: Proteins U G 3
Au Qtr. 3 cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Chem 761, MBiochem 761 or PhysChem 705 or 761. Cross-listed in Chemistry and Medical Biochemistry.

762 Advanced Biochemistry: Enzymes U G 3
An advanced treatment of enzymology.
Au Qtr. 2 1/2-cl hr. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Chem 761, MBiochem 761, or PhysChem 705 or 762. Cross-listed in Chemistry and Medical Biochemistry.

763 Advanced Biochemistry: Membranes and Bioenergetics U G 2
An advanced treatment of membranes and bioenergetics.
Wi Qtr. 2 cl. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 707, Chem 763, MBiochem 766, or PhysChem 707 or 763. Cross-listed in Chemistry and Medical Biochemistry.

765 Advanced Biochemistry: Physical Biochemistry U G 3
Nuclear magnetic resonance, optical spectroscopy, and mass spectroscopy. Chan and Foster.
Sp Qtr. 1 2/3-cl hr. Prereq: 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 765 or MBiochem 765 or PhysChem 765. Cross-listed in Chemistry and Medical Biochemistry.

766 Advanced Biochemistry: Nucleic Acid Chemistry and Structure U G 2
Reactions, synthesis, and conformations of nucleosides, nucleotides, oligonucleotides, and polynucleotides. Behrman.
Wi Qtr. 2 cl. Prereq: 515 and Chem 253, 255, and 521; or equivs. Not open to students with credit for Chem 766 or MBiochem 766 or PhysChem 766. Cross-listed in Chemistry and Medical Biochemistry.

770 Protein Engineering U G 3
Current research on genetic engineering of proteins for biotechnological and theoretical studies. Swenson.
Au Qtr. 2 1 1/2-cl hr. Prereq: 702, 761, and MicBio 860 or Mol Gen 701.

775 Biophysical Chemistry U G 3
Techniques and principles of physical biochemistry, emphasizing chromatography, electrophoresis, centrifugation, ultrafiltration, and circular dichroism. Sp Qtr. 3 cl. Prereq: Introductory courses in biochemistry and physical chemistry or permission of instructor.

778 Honors Research U 3-6
A program of reading and research for each: student with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtr. Arr. Prereq: 4th yr standing with a grade of A in at least half of the courses in biochemistry and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 crs are required of candidates for the degrees BA or BS with distinction in biochemistry. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

785 Research Principles and Techniques U 2-5 G 2-10
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrad credit and a maximum of 40 cr hrs for grad credit.

795 Special Topics in Biochemistry U G 1-3
Lecture/discussion in a seminar format of publications, current research, or research techniques in biochemistry.
Su, Au, Wi, Sp Qtr. Arr. Prereq: 521 and 615; or permission of instructor. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

811 Advanced Topics in Molecular Genetics G 3
An examination of the current research in molecular genetics by selective reading assignments and critical analysis during class discussion periods. Marziluf.
Wi Qtr. 3 hrs arr. Prereq: 611 or 702, or Mol Gen 611. Not open to students with credit for Mol Gen 811. Repeatable to a maximum of 6 cr hrs. Cross-listed in Molecular Genetics.

821 Enzymes G 3
Advanced studies of enzymes and the mechanism of enzyme action.
Wi Qtr. 3 cl. Prereq: 709 or equiv.

831 Eukaryotic Genome: Structure and Expression U 3
Current research on the structure and expression of genes in higher eukaryotes. Johnson.
Au Qtr. 3 cl. Prereq: 702 or equiv. Not open to students with credit for 781, or Mol Gen 781 or 831, or MBiochem 831. Cross-listed in Medical Biochemistry and Molecular Genetics.

850 Seminar in Biological Chemistry G 2
Au, Wi, Sp Qtrs. 1 or 2 cl. Repeatable to a maximum of 40 cr hrs. This course is graded S/U.

890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2
Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.
1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Biochemistry, Molecular Genetics, Microbiology, and Plant Biology. This course is graded S/U.

900 Advanced Topics in Biochemistry G 1-3
Advanced treatment of areas of current interest in biochemistry; topics will be announced each quarter.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 613 or permission of instructor. Repeatable to a maximum of 20 cr hrs.

999 Research in Biochemistry G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Biological Sciences: Interdisciplinary

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

797 Interdepartmental Seminar G 1-5
Two or more departments or colleges may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Su, Au, Wi, Sp Qtr. Permission of instructor. Repeatable by permission. This course is graded S/U.

Biology

General Biology Annex, 1791 Neil Avenue, 292-9661
See also courses in Biochemistry, Entomology, Evolution, Ecology, and Organismal Biology; Microbiology; Molecular Genetics; Plant Biology.

101 Introductory Biology U 5
Basic principles of biology; topics include nature of science, organismal diversity, evolution, ecology, genetics, reproduction, cell structure and function. Su, Au, Wi, Sp Qtrs. 3 cl, 13-hr rec/lab; or 21/2-hr cl, 13-hr rec/lab. Prereq: Math 075 or 076 or 101 or Mathematics Placement Level R. Not open to students with credit for 113 or H115, or Entomol 101, or PlantBio 101. Not intended for the student pursuing an undergraduate major in one of the biological sciences. This course is available for EM credit. GEC bio sci course.

102 Human Biology U 5
Exploration of human biology; topics include structure and physiological function, reproduction, and development, genetics, and disease, ecology, and evolution. Su, Au, Wi, Sp Qtrs. 3 cl or 2, 1 1/2-hr cl, 1 1/2-hr film/video presentation, 1 rec. Prereq: 101. Not open to students with credit for 114 or H116. Not intended for the student pursuing an undergraduate major in one of the biological sciences. This course is available for EM credit. GEC bio sci course.

113 Biological Sciences: Energy Transfer and Development U 5
Exploration of biology and biological principles; topics include cell structure and function, reproduction and development of plants and animals, bioenergetics, genetics, and evolution. Su, Au, Wi, Sp Qtrs. 3 cl or 2 1/2-hr cl, 1 1/2-hr lab, 1 hr rec. Prereq: Chem 101 or 121 or Hz101. Not open to students with credit for H115. This course and 114 provide a comprehensive two-qtr sequence in general biology. This course is available for EM credit. GEC bio sci course. NS Admis Cond course.

114 Biological Sciences: Form, Function, Diversity, and Ecology U 5
Continuation of 113; diversity in structure, function, behavior, and ecology among prokaryotes and eukaryotes. Au, Wi, Sp Qtrs. 4 cl, 3-lab hrs. Prereq: 113. Not open to students with credit for H118. This course is available for EM credit. GEC bio sci course. NS Admis Cond course.

H115 Honors Biology I U 5
Fundamental concepts of modern biology; an in-depth study of life processes with close interaction with research faculty from the College of Biological Sciences and bio-professional fields. Au Qtr. 3 cl, 2 1/2-hr labs. Prereq: Honors standing and performance on a pre-test with permission of instructor. Not open to students with credit for 113. This course and H116 are a two-qtr sequence in general biology for beginning students. GEC bio sci course. NS Admis Cond course.

H116 Honors Biology II U 5
Continuation of H115. Wi Qtr. 3 cl, 2 1/2-hr labs. Prereq: H115. Not open to students with credit for H118. GEC bio sci course. NS Admis Cond course.

592 Workshop in Biology
Each decimal subdivision repeatable to a maximum of 6 cr hrs. All workshops except 592.05 and 592.06 are graded S/U.

592.01 Workshop for Middle School Teachers: Part 1 G 3
Lecture and discussion of fundamental areas of biology as well as corresponding laboratory modules suitable for use in middle school life science classes. Su Qtr. 2 wks, M-F, all-day cl. Prereq: Middle school or Jr high school teachers employed in Ohio who teach life sci or general sci with a life sci component.

592.02 Workshop for Middle School Teachers: Part 2 G 3
Participants develop, test, and perfect a new laboratory exercise; discuss and solve problems relating to use of materials for 592.01 and their new exercise. Sp Qtr. 2 1/2-hr cl, 1 1/2-day workshop. Prereq: 592.01.

592.03 Workshop in Biology for High School Teachers: Part 1 G 3
Lecture and discussion of fundamental areas of biology with corresponding laboratory modules suitable for use in high school life science classes. Su Qtr. 2 wks, M-F, all day. Prereq: High school teachers employed in Ohio who teach life science or general science with a life science component.

592.04 Workshop in Biology for High School Teachers: Part 2 G 3
Participants develop, test, and perfect a new laboratory exercise and discuss and solve problems relating to use of materials from 592.03 and their new exercise. Su Qtr. 6 1/2-hr cl, 1 1/2-day workshop. Prereq: 592.03.

592.05 Biology by Inquiry for Middle School Teachers: Part 1 G 12
The emphasis of the course is the improvement of the life science content knowledge of middle school biology teachers through inquiry based instruction. Su Qtr. 6 wks, 2 1/2-hr cl per day, 4 days per wk. Prereq: Middle school life science teachers, participants in Project Discovery Life Science Institute.

592.06 Biology by Inquiry for Middle School Teachers: Part 2 G 3
The emphasis of the course is the improvement of the life science content knowledge of middle school biology teachers through inquiry based instruction. Au Qtr. Minimum of 40 hrs arr. Prereq: Middle school life science teachers, participants in Project Discovery Life Science Institute.

597 Biology of Human Diversity: Race, Gender, and Ethnicity U 5
Historical perspectives on contemporary issues in human biology and biocultural problems. Wi Qtr. 3 cl, 1 1/2-hr rec. Prereq: 10 cr hrs of biological sciences course work at standing, GEC contemporary world and social diversity course.

Biomedical Engineering

270 Bevis Hall, 1080 Cram Road, 292-7152

600 Introduction to Biomedical Engineering U G 3
Introduction to the engineering aspects of life science, utilizing lectures from engineering, medicine, and life science. Au Qtr. 3 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for Elec Eng 670. Undergraduates may enroll with permission of instructor.

Advanced Mammalian Physiology II
See Physiol 601—First of a two-quarter sequence presenting the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.

Advanced Mammalian Physiology II
See Physiol 602—Continuation of 601.

631 Fundamentals of Biomaterials U P G 3
Review of basic concepts of materials science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biological applications.

690 Introduction to Medical Device Regulation P G 3
Regulatory Affairs training program for Graduate Biomedical Engineers. Su Qtr. Course offered at off-campus site. An intensive one-week 40-hr seminar series focusing on the regulatory affairs issues and practices in the medical devices industry. This course is graded S/U.

692 Biomedical Engineering Workshop G 1
Workshop focused on a selected topic in Biomedical Engineering. Su, Au, Wi, Sp Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

694 Group Studies in Biomedical Engineering U G 1-5
Provides groups of students opportunities to pursue special studies not otherwise offered. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
Biophysic

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

Introduction to Sensory Biophysics
See SansBiol 601—Anatomy and function of sensory systems; psycho-physical research methods; mathematical descriptions of information transfer; biophysical models.

Introduction to Biophysics
See Micbiol 603—Introductory course in the approach to biological phenomena from conceptual viewpoint to viewpoint of physical sciences; molecular to organismic levels of biological hierarchical structure.

Introduction to Quantum Biology
See Micbiol 611—An introduction to applications of elementary quantum mechanics to problems in biology; conceptual rather than mathematical aspects are stressed.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

702I Advanced Experimental Methods in Biophysics U G 1-3
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

793 Individual Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

795 Seminar in Biophysics U G 1-2
Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

813 Magnetic Resonance Spectroscopy and Imaging I G 3
Basic principles of MRI/MRS including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware image formation, localized spectroscopy.
Au Qtr 1 1 1/2 hr lecture. Prereq: 813, grad standing and permission of instructor. Cross-listed in Radiology.

814 Magnetic Resonance Spectroscopy and Imaging II G 3
Continuation of 813.
Wi Qtr 1 1 1/2 hr lecture. Prereq: 813 or permission of instructor. Repeatable to a maximum of 12 cr hrs.

815 Research in Biophysics G Arr
Research for thesis and dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Biostatistics

404 Cocking Hall, 1958 Neil Avenue, 202-2896

H318 Introduction to Biostatistics U 5
Descriptive statistics, probability, model for population distributions, estimation, hypotheses testing, correlation, regression, categorical data analysis; emphasizes analysis of biomedical data using statistical software.
Wi Qtr 1 1 1/2 hr lecture. Prereq: Math 153 or 162 or 166, or permission of instructor. Not open to students with credit for Mol Gen 50, or Stat 145 or 245. For honors students majoring in biological/medical sciences.

605* Applied Survival Analysis U G 3
Techniques for analyzing censored data including: life table and product limit estimators; parametric estimation; K-sample nonparametric tests; parametric and semiparametric regression.
Wi Qtr 3 cl. Prereq: Stat 248, 521, 529, or equiv.

615 Design and Analysis of Clinical Trials U G 3
Design, monitoring, and analysis of clinical trials; includes protocol development, randomization schemes, sample size methods, and ethical issues.
Wi Qtr 3 cl. Prereq: Stat 528 and 526, or equiv.

805* Survival Analysis I G 3
Counting process approach to life history data; Nelson-Aalen estimators; product limit estimators; K-sample estimation.
Wi Qtr Prereq: Stat 722 or permission of instructor.
Biostatistics

805t Survival Analysis II  G 3
Parametric models, semiparametric proportional hazards regression, additive hazards regression, multivariate survival models.
Sp Qtr. 3 cl. Prereq: 805.

865t Analysis of Discrete Data  G 3
Theory of techniques for the analysis of discrete data including: two-way and multidimensional tables; logistic regression; loglinear models; chi-squared tests; numerical methods.
Sp Qtr. 3 cl. Prereq: Stat 622, 742, or permission of instructor.

882 Advanced Topics in Biostatistics  G 3
Selected topics in biostatistics.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

999 Research in Biostatistics  G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Black Studies

See African-American and African Studies.

Bulgarian

232 Curzn Hall, 1841 Millikon Road, 292-6733
See also Slavic Languages and Literatures.

101t Elementary Bulgarian I
Development of oral and written language skills.
Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses.
FL, Admis Cond courses.

101.01 Classroom Track  U 5
Au Qtr. 5 cl.

101.51 Individualized Track  U 1-5
Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

102t Elementary Bulgarian II
Development of oral and written language skills.
Prereq: 101 or 101.01 or 5 cr hrs of 101.51. GEC for lang courses.
FL, Admis Cond courses.

102.01 Classroom Track  U 5
Wt Qtr. 5 cl.

102.51 Individualized Track  U 1-5
Prereq: B- or above in 101 or 101.01, or 5 cr hrs of 101.51, or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 102.51 concurrently with permission of instructor.

103t Intermediate Bulgarian I
GEC for lang course.

103.51 Individualized Track  U 1-5
Prereq: B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51, 103.51 and 103.51 concurrently with permission of instructor.

104t Intermediate Bulgarian II
GEC for lang course.

104.51 Individualized Track  U 1-5
Continuation of 103; development of the four skills.
Prereq: 5 cr hrs of 103.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor.

111t Intensive Intermediate Bulgarian U 10
Readings, oral and written practice, grammar review.
Sp Qtr. 10 cl. Prereq: 102 or equiv. Equiv to the 3rd and 4th courses of the foreign language sequence. GEC for lang course.

405t Advanced Bulgarian I

405.51 Individualized Track  U 1-5
Continuation of 104.51; development of the four skills.
Prereq: 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 105.61 concurrently with permission of instructor.

407t Advanced Bulgarian II

407.51 Individualized Track  U 1-5
Continuation of 405.51; development of the four skills.
Prereq: 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

Business Administration

126 Hagerty Hall, 1775 College Road (through August 1999), 292-2715
100 Schoenbaum Hall, 210 West Woodruff Avenue.

100 College of Business Survey  U 1
Academic requirements and resources; University policies college procedures and resources; student rights and responsibilities; academic areas of specialization; careers in accounting and business administration.
Au Qtr. 2 cl. H100 (honors) may be available to students enrolled in an honors program. Prereq: 1st qtr freshman standing in direct enrollment program in BUS. Not open to students with credit for UVC 100.

H101 Business and Society  U 5
A critical examination of the socioeconomic framework of business; seminar discussion of selected readings.
3-5 cl. Prereq: Fresh or soph standing, and approved application for College of Business Honors Program. SS, Admis Cond course.

201 Business Career Planning  U 2
Exploration of business careers through self-assessment, informational interviews, and employer presentations; information on co-ops/internships and job search strategies.
Au, Wi, Sp Qtrs. 2 1-hr cl. H201 (honors) may be available to students enrolled in an honors program. Prereq: Soph standing and enrollment in the College of Business, others by permission of instructor. 3.40 CPHR required for honors version.

493 Individual Studies  U 1-10
Individual study projects in selected interdisciplinary topics in business administration.
Su, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

494 Group Studies  U 1-10
Group study projects in selected interdisciplinary topics in business administration.
Su, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

499 Business Skills and Environment I  U 4
Introduction to the environment of business and development of skills preparatory to the multi-disciplinary upper division curriculum in business.
Au, Sp Qtrs. 2 2-hr cl. H499 (honors) may be available to students enrolled in an honors program. Prereq: Soph standing in the Fisher College of Business. Open only to students enrolled in the College of Business. To be taken during the quarter of admission to the College of Business.

555 Introduction to International Business  U 4
Basic coverage of world trade and investment problems, and introduction to multinational corporation strategies and the various types of environments in which they do business.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Econ 201 or 203 (3.4 cumulative plhr ratio required for honors version). H555 may be available to students enrolled in an honors program.

651t The Japanese Business Environment  U  G 5
Study of the relationship between business practices and business environments in the Japanese context; comparative reference to these same relationships in other countries.
2 2-1/2-hr cl. Prereq: Jr or sr or grad standing.

651t Doing Business with the Japanese  U  G 4
In-depth study of operational and strategic issues involved in interaction with Japanese firms and markets; competitive, vendor-customer, and collaborative relations.
2 2-hr cl. Prereq: Jr or sr or grad standing, 655 or 655 or permission of instructor.
689 Professional Experience in Business U 0
Students complete a co-op or internship assignment in private industry or for a government agency. Assignment is supervised by the employer and monitored and evaluated by the Professional Experience Program.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of Professional Experience Program. Repeatable. This course is graded S/U.

693 Individual Studies U G 1-6
Individual study projects in selected interdisciplinary topics in business administration.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-6
Group study projects in selected interdisciplinary topics in business administration.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

696.01 Domestic
696.02 Foreign

750 Resolving Social Conflict G 4
A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflict. Lewicki.
Au Qtr. 1-4 hr cr. Prereq: Grad standing or permission of instructor. Cross-listed in City and Regional Planning and Natural Resources.

H783 Honors Research U 1-5
Special topical research in business administration; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPFR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course may be Progress ("P") or letter graded.

790 Teaching Business Students G 3
Preparation for business instruction at the undergraduate level; focuses on development of college business teachers through practice-centered inquiry.
1 cl. Prereq: Ph.D. student enrolled in College of Business. Limited to 20 students. This course is graded S/U.

798 International Business Policy and Strategy U G 4
Analysis and simulation of major policy decisions in the context of international business; emphasis on consideration of international business. Sp Qtr. 2-2 hr cr. Prereq: Approved application for BSBA in international business, Bus Adm 555, Bus-Fin 725, and Bus-Mktg 757; or written permission of instructor.

799 Business Policy U G 4
Analysis of policy/strategy management issues in the context of entire firms and their industries, using professional tools and concepts helpful in strategy formulation and implementation.
Su, Au, Wi, Sp Qtrs. 2.2 hr cl. H799 (honors) may be available to students enrolled in an honors program or by permission of college office. Prereq: Bus-Fin 510 and 620, Bus-Mktg 630, Bus-Mktg 650, Bus-MHR 701, and registration for final qtr BSBA program prior to graduation, others by permission of instructor. First class attendance required.

856 Introduction to Multinational Business G 4
Introduction to the environment of international business and to the operations of the multinational firm, including an understanding of the dimensions of international trade and investment and their importance to the US economy and business firms.
Au Qtr. 2.2 hr cl, arr. field research.

857 International Business Policy and Strategy G 4
Comprehensive study of policy and strategy formulation of firms in an international context with simulated cross-cultural negotiations, and the development of an international strategy for a local firm.
Sp Qtrs. 2.2 hr cl. Prereq: 555 or 556 or equiv.

893 Individual Studies G 1-6
Individual study projects in selected interdisciplinary topics in business administration.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies G 1-6
Group study projects in selected interdisciplinary topics in business administration.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

998 Research in Business Interdisciplinary: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/J.

999 Research in Business Interdisciplinary: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Business Administration: Finance

700 Fisher Hall, 2100 Neil Avenue, 292-5026

220 Personal Finance U 3
Budgeting, credit, borrowing money, bank relationships, savings, insurance, real estate, stocks and bonds, income taxes, social security, annuities, wills, trusts, estates, and taxes.
Su, Au, Wi Qtrs. Prereq: 2nd yr standing. Not open to students in the College of Business majoring in either accounting or finance.

493 Individual Studies U 1-10
Individual study projects in selected areas in finance.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

494 Group Studies U 1-10
Group study projects in selected areas in finance.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

498 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

498.01 Domestic
498.02 Foreign

510 Legal Environment of Business U 4
An introduction to American legal institutions and sources of law and an analysis of basic concepts of public and private law related to business decisions.
Su, Au, Wi, Sp Qtrs. 2.2 hr cl. H510 (honors) may be available to students enrolled in an honors program. Prereq: 3rd yr standing.

612 Legal Aspects of the Distributive Processes U G 4
Problems arising out of the distribution of consumer goods; obligations of sellers, including product liability; analysis of selected pricing, consumer protection, and commercial paper statutes.
Prereq: 510 or 511 or equiv.

613 Legal Environment of Institutional Management U G 4
Examination of business associations, emphasizing the legal aspects of the management process and the societal influence and responsibilities of the corporation.
2.2 hr cl. Prereq: 510 or equiv.

614 Managerial Aspects of Contract Law U G 4
Review of contract law with emphasis on common law and changes by legislation.
2.2 hr cl. Prereq: 510 or equiv.

620 Business Finance U G 4
Introduction to financial management of business firms; financial analysis, planning and control; working capital management; capital investment decisions and required rates of return; capital structure decisions and sources of financing.
Su, Au, Wi, Sp Qtrs. 2.2 hr cl. H620 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: Econ 200 and 501, or equivs; and Accintg 201 or 212 or equiv. This course is available for EM credit.
640 Insurance and Risk U G 4
Principles and practices of insurance and risk management, including personal, business, and social viewpoints in regard to insurance for life, health, property, and liability risks.
Au, Sp Qtrs. 2-2 hr cl. Prereq: Econ 200 and 201, or equivs.

670 Real Estate and Urban Land Economics U G 4
Investigation in urban land economics and real estate markets; topics include land use, property taxation, income taxation, and property rights.
Su, Wi Qtrs. 2-2 hr cl. Prereq: Econ 200 and 201, or equivs.

693 Individual Studies U G 1-6
Individual study projects in related areas in finance.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

694 Group Studies U G 1-6
Group study projects in selected areas in finance.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs.

720 Corporate Finance U G 4
A critical study of the field of corporate finance from an economic point of view.
2-2 hr cl. Prereq: Acctng 711 or equiv; and Econ 201 or equiv. Open only to students preparing for grad work in business. Not open to students in structured MBA.

721 Corporate Finance U G 4
Effects of projects and financial policy on stockholder wealth, capital budgeting, project cost of capital, dividend policy, debt policy, leading policy, and option pricing.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or equiv (C620 and 3.4 CPRHR required for honors version) and Bus-Mgt 520 and 331; or permission of instructor. H721 may be available to students enrolled in an honors program.

722 Special Topics in Investment Management U G 4
Investment objectives; types of investments and their relative merits; security prices and yields; investment programs; and taxes.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or equiv and Bus-Mgt 330 and 331; or permission of instructor.

723 Investment Analysis U G 4
Methods of investment analysis; analysis of investment data; principles and standards for selection of specific investment; portfolio management.
Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 722 or equiv.

724 Stock Market U G 3
Practices, procedures, and evaluations relating to buying and selling securities in the organized security markets.
Su, Au, Sp Qtrs. 3-2 hr cl. Prereq: 722 and 3.2 CPRHR or permission of instructor.

725 International Finance U G 4
The international financial environment; management of financial risks inherent with international business; problems of implementing corporate finance principles overseas; financial aspects of parent-subsidiary relationships.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or equiv and Bus Adm 555 and Bus-Mgt 330 and 331; or permission of instructor.

726 Management of Financial Institutions U G 4
Overview of the role of financial institutions; study of asset and liability management in commercial banks and savings institutions; cases and simulation.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 620 or Econ 520 or equivs., and Bus-Mgt 330 and 331; or permission of instructor.

729 Cases In Managerial Finance U G 4
Analysis of qualitative and quantitative financial factors involved in managerial decisions in actual business cases.
2-2 hr cl. Prereq: 721 or equiv.

741 Life and Health Risk Management U G 4
Management of risks involving health or death; employee benefit programs for corporations, non-profit organizations, and government institutions; the life and health insurance industry.
Wi Qtrs. 2-2 hr cl. Prereq: 640 or equiv, and Bus-Mgt 330 and 331 or equiv; or permission of instructor.

749 Property and Liability Risk Management U G 4
Management of risks involving property damage or legal liability for businesses, hospitals, and government institutions; identification of resources for managing these risks.
Sp Qtrs. 2-2 hr cl. Prereq: 640 or equiv and Bus-Mgt 330 and 331; or permission of instructor.

771 Real Estate Investment Analysis U G 4
Feasibility and market analysis with consideration of property and income taxation and urban land developments.
Au Qtr. 2-2 hr cl. Prereq: 620 or equiv and Bus-Mgt 330 and 331 or equivs; or permission of instructor.

772 Real Estate Finance U G 4
Sources and methods of obtaining funds for real estate investment; financial institutions, legal considerations, the construction industry and cycles, and financing policies, practices, and experiences.
Sp Qtr. 2-2 hr cl. Prereq: 620 or equiv and Bus-Mgt 330 and 331 or equivs; or permission of instructor.

773 Real Estate Valuation U G 4
Professional valuation as a guide to business decisions; valuation theory and procedures; factors influencing real estate values, and the selection and analysis of data.
Au Qtr. 2-2 hr cl. Prereq: Econ 200 or equiv or permission of instructor.

774 Income Property Valuation U G 4
The value-creating attributes of investment properties; methodologies of income-property valuation and investment analysis.
Sp Qtr. 2-2 hr cl. Prereq: Econ 200 or equiv or permission of instructor.

775 Real Estate Law U G 4
Legal aspects of real estate transactions and documents (deeds, mortgages, and leases) and selected elements of the law of real estate brokerage.
Wi Qtr. 2-2 hr cl. Prereq: 510 or equiv or permission of instructor.

783 Honors Research U 1-5
Special topics research in finance, business law, insurance and risk, and/ or real estate; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Arr. Prereq. Jr or sr standing in business, 3.40 CPRHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course may be Progress ("IP") or letter graded.

821 Seminar in Corporate Finance G 4
Conceptual foundations of corporate financial decisions with an emphasis on valuation review and evaluation of selected empirical research in financial economics.
Wi Qtr. 2-2 hr cl. Prereq: MBA 810 or 811, or permission of instructor.

822 Security Markets G 4
A critical study of the markets for listed and unlisted securities and the factors influencing security prices.
Au Qtr. 2-1 1/2 hr cl. Prereq: Permission of instructor.

823 Special Topics in Investment Management G 4
In-depth analysis of selected investment topics such as options markets, futures markets, convertible securities, effects of taxes and inflation on interest rates, term structure of interest rates, and modern portfolio theory.
Wi Qtr. 2-2 hr cl. Prereq: 822 or permission of instructor.

824 The Stock Market G 5
Practices, procedures, and evaluations for managing equity portfolios.
Su, Au, Wi, Qtrs. 3-2 hr cl. Prereq: 822.

825 International Finance G 4
The international financial environment, management of financial risks inherent with international business; problems of implementing corporate finance principles overseas; financial aspects of parent-subsidiary relationships.
Sp Qtr. 2-2 hr cl. Prereq: 822 and 833 recommended; permission of instructor for PhD students.

826 Financial Institutions G 4
Financial management of commercial banks and savings institutions; review, analysis and evaluation of pertinent literature and research; readings and cases.
Au Qtr. 2-2 hr cl. Prereq: MBA 810 and 811 or permission of instructor.

827 Treasury and Fixed Income Management G 4
Forecasting cash flows, short term asset and liability management and long term bond management.
Sp Qtr. 2-2 hr cl. Prereq: 811 and 822 and MBA 310.

828 Cases in Corporate Finance G 4
Intensive analysis of case studies to develop the student's ability to make financial decisions. Applying and integrating ideas learned in MBA 810/ 811.
Sp Qtr. 2-2 hr cl. Prereq: MBA 810 or 811.

829 Risk Management and Financial Engineering G 4
Course addresses corporate finance benefits of risk management and tools of risk management. Issues in corporate finance and derivatives pricing.
Sp Qtrs. 2-2 hr cl. Prereq: 822 and MBA 810 and 811.
841* Risk Management and Insurance G 4
Principles of risk management and insurance; overview of insurance coverages and employee benefit programs; and risk management for businesses, hospitals, and government institutions.
2 2-hr cr. Prereq: Permission of instructor.

843 Risk Management: Property and Liability Risks G 4
Management of risks involving property and losses incurred by the legal environment and resources for businesses, hospitals, and government institutions to manage these risks.
2 2-hr cr. Prereq: 841.

845 Risk Management: Benefit Programs G 4
Management of employee benefit programs for businesses, hospitals, and government institutions; alternatives for funding and claims control; and social insurance systems, including social security.
2 2-hr cr. Prereq: 841.

868 Contemporary Employment Practices and the Law G 4
An examination of individual rights in the workplace; unjust discharge, employee privacy rights, and employer liability for intentional injuries; equal employment opportunity law; emphasis on recent legal developments.
Sp Qtr. 2 2-hr cr. Prereq: Bus-MHR 612 or permission of instructor. Not open to students with credit for Bus-Adm 694AC or Bus-MHR 686. Cross-listed in Business Administration: Management and Human Resources.

870 Seminar in Real Estate G 4
Au Qtr. 2 2-hr cr.

871 Real Estate Development G 4
Components of real estate development: residential, shopping centers, offices, apartments, and pure land. Market analysis, financing, feasibility, and taxation.
Wi Qtr. 2 2-hr cr.

872 Real Estate Finance G 4
Examine real estate as investment. Analysis of the mortgage market, mortgage derivatives, and bond portfolio management when mortgage-backed securities and derivatives are used.
Sp Qtr. 2 2-hr cr.

873 Urban Real Estate Analysis G 4
Analysis and administration of urban real estate resources, including property valuation, investment analysis, financing, market analysis of local economies, and legal considerations.
Sp Qtr. 2 2-hr cr. Prereq: Permission of instructor.

893 Individual Studies G 1-6
Individual study projects in related areas in finance. 
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to maximum of 15 cr. hrs. This course is graded S/U.

894 Group Studies G 1-6
Group study projects in selected areas in finance.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to maximum of 15 cr. hrs.

920 Theory of Finance G 5
Examination of the modern theory of asset pricing and its theoretical foundations.
Au Qtr. 3 2-hr cr. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

921 Specifying and Testing Models of Asset Pricing G 5
Focuses on applied econometric research on asset pricing; emphasis on understanding the flow of research and methods used in financial research.
Wi Qtr. 3 2-hr cr. Prereq: Successful completion of Finance Qualifying Exam or permission of instructor.

922 Advanced Theory of Corporate Finance G 5
Emphasizes developments in corporate financial policies including capital structure, compensation, and dividends; contracting costs and firm's interaction with capital markets.
Sp Qtr. 2 1 1/2-hr cr. Prereq: 920 and 921.

923 Research in Finance G 5
Review and access of the research methodologies of finance, and the development and completion of a research paper.
Au Qtr. 3 2-hr cr. Prereq: 920, 921, and 922 or permission of instructor. Repeatable to a maximum of 15 cr. hrs.

998 Research in Finance: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research in Finance: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Business Administration: Management and Human Resources

700 Fisher Hall, 2100 Neil Avenue, 392-SG28

211 Unionism and Collective Bargaining in the U.S. U 5
A survey of unionism and collective bargaining in the U.S. development, structure, and government of unions; process content and effects of collective bargaining.
2 2-hr cr. BER IAC course. SS Admins Cond course.

493 Individual Studies U 1-10
Individual study projects in selected areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr. hrs. This course is graded S/U.

494 Group Studies U 1-10
Group study projects in selected areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr. hrs.

500 Introduction to Administrative Problems U 3
Introduction to techniques of management and supervision and to the conceptual frameworks and research underlying them; methods of improving individual and organizational efficiency and effectiveness; cases and exercises.
Au, Wi, Sp Qtrs. 3 cr. Not open to students with credit for 701. Credit for this course will not count toward a BS degree in business administration.

612 Law of Industrial Relations U 4
Law and policy in labor-management and union-member relations; union labor practices; union internal affairs.
2 1/2-hr cr. Prereq: 211 or equiv with written permission of instructor.

613 Trade Union Administration U 4
An examination and analysis of the structure and government of American worker organizations as an institutional response to social, political, economic, and legal forces.
2 1/2-hr cr. Prereq: 211 or equiv with written permission of instructor.

614 Public Sector Collective Bargaining U 4
Legislative, judicial, economic, and social factors in public sector bargaining; survey of practice in federal, state, and local jurisdictions.
2 1/2-hr cr. Prereq: 211 or grad standing.

651 Human Resource Policy: Conceptual Framework and Issues U 4
Theories of the labor market as applied to the analysis of human resource policy issues; education, training, unemployment, poverty, and discrimination.
Au, Sp Qtrs. 2 1/2-hr cr. Prereq: Econ 201 or equiv with written permission of instructor.

652 Human Resource Policy: Legislation and Institutions U 4
Critical review of current or proposed legislation and institutions relating to human resource development, maintenance, and utilization.
Wi Qtr. 2 1/2-hr cr. Prereq: 651 or equiv with written permission of instructor.

653 Human Resource Planning U 4
Survey of concepts and techniques of human resource planning, with special emphasis on applications of human resource requirements.
2 1/2-hr cr. Prereq: 651 or equiv with written permission of instructor.

660 Introduction to Human Resources Management U 4
Principles and practices of recruiting, selecting, developing, compensating, and utilizing effective human resources.
Su, Au, Wi, Sp Qtrs. 2 1/2-hr cr. H660 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: Econ 200 or equiv.

693 Individual Studies U 1-6
Individual study projects in related areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours. This course is graded S/U.
694 Group Studies U G 1-6
Group study projects in related areas in management and human resources. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours.

701 Introduction to Organizational Behavior U 5
Introduction to individual and group behavior in organizations; procedures for supporting and strengthening emergent behavior; examination of organizational interaction with environments. Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Jr standing. Honors Prereq: 3.40 CPHR. H701 may be available to students enrolled in an honors program. Not open to students with credit for 705.

703 Human Resource Training and Development U 4
Introduction to behavioral concepts and organization practices related to training and developing human resources and organization development. Au, Sp Qtrs, 2 1 1/2-hr cl. Prereq: 660 or 860 and Bus-Mgt 330; or permission of instructor.

704 Management Applications in Business U 4
Application of behavioral science knowledge to managing within the context of business organizations; emphasis on such topics as motivation, supervision, groups, and conflict. Wi, Sp Qtrs, 2 1 1/4-hr cl. Prereq: 701 and sr standing in BSBA program. Not open to grad students.

756 Staffing Organizations U 4
Introduction to the scientific, legal, and administrative issues associated with the recruitment, hiring, and placement of individuals by organizations. Wi Qtr. 2 1 1/2-hr cl. Prereq: 660.

761 Collective Bargaining Administration U 4
Examination of the process of accommodation and rule-making among management, employees, and government relative to their respective goals and strategies, and pertinent legislation and environmental constraints. Au Qtr. 2 1 1/2-hr cl. Prereq: 660 or 701 and Bus-Mgt 330; or permission of instructor.

762 Compensation Administration U 4
Managerial aspects of motivation and compensation principles and practices for administrative, operative, research, and professional employees in private and public organizations. Wi Qtr. 2 1 1/4-hr cl. Prereq: 660 or equiv and Bus-Mgt 330 or equiv; or permission of instructor.

763 Comparative Labor Movements U G 4
A comparison of industrial relations practices, history and laws, in Western Europe, Canada, Japan, and the United States. Au, Sp Qtrs, 2 1 1/2-hr cl. Prereq: Jr or sr standing in BUS, ASC, or LAW and Bus-Mgt 330; or permission of instructor.

764 Worker-Management Cooperation Initiatives U G 4
An examination of critical theories, principles, and concepts upon which initiatives such as QWL, QC, ESOP, etc. in union and nonunion environments. 2 1 1/2-hr cl. Prereq: 612 or 614 or 651 or 701 or 763 or equiv, with written permission of instructor.

765 Comparative Management Systems and Environments U G 4
A conceptual approach for analyses of cultural norms and values and assessment of their implication for managerial decision-making. Wi, Sp Qtrs, 2 2-hr cl. Prereq: Bus-Mgt 330; or permission of instructor.

769 Cases in Human Resources Management U 4
Problems and case histories are utilized to develop proficiency in applying principles and developing decision-making abilities in regard to human resources management. Sp Qtr. 2 2-hr cl. Prereq: 761 or 762 or permission of instructor.

H783 Honors Research U 1-5
Special topics research in management and human resources; research evaluated through papers, thesis, and/or special examinations. Su, Au, Wi, Sp Qtrs. Jr, Sr, or standing in Business, 3.40 CPHR, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course may be Progress ("P") or letter graded.

790t Entrepreneurship U 4
Entrepreneurship: managing creativity and growth in the new or emerging firm. 1 3-hr cl.

795.01 Entrepreneurship—BA
Wi Qtr. Prereq: 701, Bus-Fin 510 and 620, Bus-Mgt 630, Bus-Mktg 660. Not open to students with credit for 795 or 795.02.

795.02 Entrepreneurship—NB
Prereq: Sr standing. Open to non-business majors only. Not open to students with credit for 795 or 795.01.

796t Analysis and Evaluation of New Enterprise U 4
Practicum course providing students with the opportunity to apply business concepts in problem situations in new enterprises. Secton.

800t Introduction to Administrative Behavior G 3
Introduction to behavioral concepts of concern to management, individual, group and organizational behavior. 2 1 1/2-hr cl. Not open to students with credit for BUS-MHR 701 or structured MBA.

801 Self-Management, Professional Development and Career Success G 4
Uses behavior modeling techniques to teach students a variety of interpersonal skills needed by generalist managers. 1 4-hr cl.

802 Managerial Negotiations G 4
Exploration of the major concepts and theories of the psychology of bargaining and negotiation, and the dynamics of interpersonal and intergroup conflicts and their resolution. Wi, Sp Qtrs. 2 2-hr cl.

803t Organization Theory and Design G 4
An examination of the theories and practices involved in the design of formal organizations. 2 1 1/2-hr cl. Not open to students in structured MBA.

804 Producing Change in Organizations G 4
Study of requirements to produce and manage change in organizations. Sp Qtr. 1 4-hr cl.

805t Career Development G 4
Study of career development within organizations and organizational perspective. 2 2-hr cl. Prereq: 800 or 860 or MBA 820 or permission of instructor.

806 Management and Individual Behavior G 4
Theory and application of the manager’s role in dealing with individual employee behavior. Sp Qtrs. 2 2-hr cl.

807 Designing Organizations for Accomplishment G 4
A practical and pragmatic investigation into the principles for designing organizations for performance based on a network perspective. Wi Qtr. 1 4-hr cl. Prereq: Grad standing. An examination of the foundations of organizing organization for performance based on a network perspective.

808 Managing the Diversified Firm G 4
Explores how firms that start from a relatively disadvantaged position can become and remain the dominant competitors in their industry. Wi Qtr. 2 2-hr cl. Prereq: MBA 980.

809 Reengineering the Corporation G 4
An inquiry into organizational change and reengineering. Explores issues dealing with the design and implementation of systemic organizational change, organizational transformation, organizational learning, and reengineering. Au Qtr. 2 2-hr cl. Prereq: MBA 860 or 861.

811 Human Resource Management Research Methods G 4
Introduction to methods needed to conduct research in management and human resources. Wi Qtr. 2 -hr cl.

851 Conceptual and Historical Foundations of Labor and Human Resources I G 4
Appraisal of theories, principles, and concepts related to macro and micro labor and human resources set within historical context. Au Qtr. 2 2-hr cl. Prereq: Admits to grad programs in labor and human resources or permission of instructor.

852 Conceptual and Historical Foundations of Labor and Human Resources II G 4
Examination of macro and micro labor human resources issues and policies set within historical context. Wi Qtr. 2 1 1/2-hr cl. Prereq: 851 or permission of instructor.

853 Human Resource Information Systems G 4
Examination of the practical and conceptual issues in the development, acquisition, implementation and application of Human Resources Information Systems and other data management techniques. Su, Wi Qtrs. 2 2-hr cl. Prereq: 811, 867, Bus-Mgt 702.
854 Seminar in Human Resource Policy  G 4
Theories of the labor market as applied to the analysis of human resource policy issues, training, unemployment, discrimination, immigration, and poverty.
1 3-hr cl. Prereq: 851, or any of two of the following: 652, 653, or 654

855 Development of Human Resources  G 4
Study of the processes of human resource development as development is identified in theory, research policy and application, experimental learning, and adult development in organization.
Sp, Qtr. 2 2-hr cl. Prereq: 20 cr hrs in related social science courses.

856 Staffing the Organization  G 4
Examination of the scientific, legal, and administrative issues associated with the recruitment, selection, and placement of individuals by organizations.
Au Qtr. 1 3-hr cl. Prereq: 860 or permission of instructor.

858 International Human Resources  G 4
Survey of human resource management practices of selected countries. Economics, politics and culture examined to understand the peculiarities of human resource management in each situation.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

859 Business Ethics  G 4
Overview of moral issues in business. Focuses on unethical theories and traditions bearing on these activities.
Au Qtr. 1 3-hr cl. Prereq: Grad standing.

860 Management of Human Resources  G 4
Analysis of human resources practice and policies, value configurations, leadership, job design, motivation, and reward systems as these relate to individual performance and organizational effectiveness.
Wi Qtr. 2 1½-hr cl. Not open to students with credit for 660 or H660.

861 Seminar in Union Management Issues  G 4
Examination of such issues as bargaining and conflict resolution processes, grievance handling and arbitration, white-collar unionism, productivity, quality of workforce, safety and health, and flexibility.
Su Qtr. 1 2½-hr cl. Prereq: 860 or equiv, or permission of instructor.

862 Seminar in Human Resource Management  G 4
Theory and problems involved in selecting, developing, retaining, motivating, utilizing, and allocating human resources within complex organizations.
Sp Qtr. 1 2½-hr cl. Prereq: 860 or equiv with permission of instructor.

863 Business Practices and the Human Resource Manager  G 4
Introduction to business practices for the human resource practitioner.
Au Qtr. 1 3-hr cl. Prereq: Grad standing in the MLHR program. Previously offered as Bus-MHR 894B.

864 Labor Dispute Settlement  G 4
Analysis of the functional role of labor conflict in the industrial relations system; evaluation of institutions for dispute resolution in the public and private sectors.
1 2-hr cl. Prereq: 761 or 861.

865 Compensation Theory and Practice  G 4
Introduction to pay systems, including job evaluation, pay surveys, performance appraisals, and benefits.
Au Qtr. Prereq: 660, 660, or equiv and Bus-Mgt 330 or equiv. Not open to students with credit for 762.

867 Statistical Analysis for Labor and Human Resources Management II  G 4
Second quarter of a sequence preparing students to analyze and use Human Resource data in decision-making, focusing on hierarchical regression, moderated regression, ANOVA with multiple independent variables, non-parametric analysis.
1 3-hr cl. and lab projects. Prereq: Bus-Mgmt Sci 702 or equiv or permission of instructor.

868 Contemporary Employment Practices and the Law  G 4
Title VII of the 1964 Civil Rights Act, The Equal Pay Act, the Age Discrimination in Employment Act, the Civil Rights Act of 1967, and federal affirmative action program are discussed.
Wi Qtr. 2 2-hr cl. Prereq: 612 or permission of instructor. Not open to students with credit for Bus-Fin 866. Cross-listed in Business Administration: Finance.

893 Individual Studies  U G 1-6
Individual study projects in related areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours. This course is graded S/U.

894 Group Studies  U G 1-6
Group study projects in related areas in management and human resources.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 credit hours.

895 Seminar in Entrepreneurship  G 4
Lecture, discussion, and case analysis on managing growth in the new or emerging firm.
2 cl.

895.01 Seminar in Entrepreneurship—BA
Au Qtr. Prereq: BA core and permission of instructor. Not open to students with credit for 895 or 895.02.

895.02 Seminar in Entrepreneurship—NB
Open to non-business graduate students only. Not open to students with credit for 885 or 885.01.

911 Introduction to Behavioral Research Methods in Business  G 5
Introduction to research design and methodology as it relates to the study of business and organizational phenomena.
Au Qtr. 1 5-hr cl.

912 Advanced Analysis of Organizational Research  G 5
Analysis and comparison of relevant business and organizational theories through an in-depth consideration of research design, methods, and analysis and the development of student-originated research proposals.
1 5-hr cl.

913 Individual Behavior in Formal Organizations  G 5
Advanced discussions of theory and research on individual behavior, motivation, decision-making, job design, and reward system as they relate to individual and organizational performance.
1 5-hr cl.

914 Work Groups in Formal Organizations  G 5
Theory and research on formal and informal structures in work groups and their influence on productivity and management.
1 5-hr cl.

915 Advanced Formal Organization Theory  G 5
Theory and research on the structural characteristics of formal organizations with particular emphasis on the management of the organization as a dynamic system.
1 5-hr cl.

916 History of Macro-Organizational Behavior  G 5
Development of theory, research, and thought in macro-organizational behavior.
Au Qtr. 1 5-hr cl.

917 Seminar in Organizational Behavior  G 5
A critical study of current research problems and trends in organizational behavior; builds on the concepts, models, and perspectives developed in 913, 914, and 915.
1 5-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

918 Seminar in Integrative Organizational Behavior Research  G 2
Continuing seminar for integration of organizational behavior concepts.
Prereq: Enrollment in the organizational behavior area of the Bus Adm PhD program. This course is graded S/U.

919 Theoretical Foundations of Organizational Thought  G 4
Seminar in the historical evolution of concepts, models, and perspectives in organizational behavior and the practice of management.
1 3-hr cl. Prereq: Permission of instructor.

920 Seminar in Strategic Management  G 5
An examination of the concepts, models, theories, and research underlying contemporary thinking on strategic management.
1 5-hr cl. Prereq: Permission of instructor.

925 Seminar in International Business and Organization Theory  G 5
A critical study of current research methodologies and findings in the field of international business.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

950 Advanced Experience in Labor and Human Resources  G 1-6
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 12 or hrs in Bus-MHR.

950.01 Internship
Supervised practical experience relating to labor and human resources in public or private establishments, Center for Human Resources Research, Labor Education and Research Service, or under a faculty member.
64 Business Administration: Management and Human Resources

950.02 Tutorial
Preparation of investigative paper relating course work to specific problem in industrial relations or human resource policy.

951 Advanced Seminar in Human Resource Policy G 5
Selected issues in human resource policy at federal, state, and local government levels.
Au Qtr. 1-5 hr cl.

952 Advanced Seminar in Unionism and Collective Bargaining G 4
Selected issues in unionism and collective bargaining.
2-2 hr cl. Prereq: 613 and 761 or equiv., or permission of instructor

955 Seminar in Staffing P G 5
Examination of theory and research on staffing in complex organizations.
1-5 hr cl. Prereq: One course in stat or permission of instructor.

960 Seminar in Industrial Relations Thought G 4
A consideration of industrial relations thought in terms of its historical and theoretical evolution in private and public sectors.
1-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

961 Seminar in Industrial Relations Research G 4
A consideration of relevant industrial relations research and methodology, and individual development of research projects in private and public sectors.
1-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

963 Seminar in Training and Development G 4
Examination of theory and research on training and development in complex organizations.
1-3 hr cl. Prereq: One course in stat or permission of instructor.

965 Seminar in Compensation G 5
Examination of theory and research on compensation administration in complex organizations.
1-5 hr cl. Prereq: One course in stat or permission of instructor.

998 Research in Labor and Human Resources: Thesis G 1-7
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 12 cr hrs in BUS-MHR at 800 level or above. Repeatable to a maximum of 20 hrs. This course is graded S/U.

999 Research in Labor and Human Resources: Dissertation G 1-15
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

Business Administration:
Management Sciences

600 Fisher Hall, 2100 Neil Avenue, 292-1275

330 Decision Sciences: Statistical Techniques U 5
Examination of use of statistical techniques in managerial decision-making processes; confidence intervals, hypothesis testing, simple and multiple regression, quality control.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: CprInf 200 and Stat 133 or equiv.

331 Decision Sciences: Operations Research, Modeling and Applications U 4
Examination of use of operations research models in managerial decision-making processes: linear programming, decision analysis and simulation applications. Emphasis on formulation and interpretation of models; supported by spreadsheet based software.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: CprInf 200 and Stat 133 or equiv.

493 Individual Studies U 1-10
Individual study projects in selected areas in management sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

494 Group Studies U 1-10
Group study projects in selected areas in management sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

601 Business Statistics U G 4
Applications of statistical techniques to the analysis of business and economic data.
Wi Qtr. 2-2 hr cl. Not open to students with credit for 330.

630 Introduction to Operations Management: Improving Competitiveness in Organizations U G 4
Key operating issues in service and manufacturing organizations that have strategic and tactical implications. Students participate in discussions relating current business events to operations management and case analysis.
Su, Au, Wi, Sp Qtrs. 2-2 hr cl. H630 (honors) may be available to students enrolled in an honors program or by permission of faculty. Prereq: Jr standing

635 Individual Studies U G 1-6
Individual study projects in selected areas in management sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-6
Group study projects in selected areas in management sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

731 Operations Strategy and Design J G 4
An analysis of the strategic implications of operations management decision making and issues involved in designing a productive system; topics include facility location and layout, capacity management, quality management, and the management of technology.
Au, Wi Qtrs. 2-2 hr cl. Prereq: 330, 331, and 630; or permission of instructor.

732 Operations Planning and Control U G 4
An analysis of the planning and control of materials as they flow within an organization; topics include production planning, material requirements planning (MRP), capacity management, master production scheduling, and just-in-time techniques.
Au, Wi Qtrs. 2-2 hr cl. Prereq: 330, 331, and 630, or permission of instructor.

733 Information Systems in Operation Management U G 4
A study of the impact that information systems have on strategic and tactical decisions of operations managers; emphasis on applying decision support systems to problems faced by these managers.
Sp Qtr. 2-2 hr cl. Prereq: 630 and a course in computer programming, or permission of instructor. Not open to students who have completed Bus-Mgt 792 or simultaneously enrolled.

734 Service Operations Management U G 4
Study of service industry and processes from an operations management perspective.
2-2 hr cl. Prereq: 330, 331 and 630.

735 Purchasing and Materials Management U G 4
Explores the industrial-institutional purchasing cycle for operating supplies, raw materials components and capital equipment within the context of the materials management organization concept.
Au, Qtrs. 2-2 hr cl. Prereq: 630 and Bus-Mgt 650.

736 Purchasing Strategy U G 4
Focus on the importance of developing an integrated purchasing management strategy which is consistent and congruent with the business firm's strategy. Purchasing is viewed as a competitive tool.
Wi Qtr. 2-2 hr cl. Prereq: 330, 331, and 630.

737 International Operations Management U G 4
This course focuses on managing manufacturing and service operations across national boundaries to provide an organization with a competitive advantage.
Wi, Sp Qtrs. 2-2 hr cl. Prereq: 630 or permission of instructor.

739 Managing Process Improvement U G 4
Examines process reengineering and quality management for manufacturing and service organizations. Topics covered include process flow and waiting line analysis, quality by design, service quality guarantees, learn problem solving tools, Malcolm Baldrige National Quality Award criteria and statistical process control.
Wi, Sp Qtrs. 2-2 hr cl. Prereq: 330, 331, and 630, or permission of instructor.

H785 Honors Research U 1-5
Special topics in operations management sciences; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 CPRH, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course may be Progress ("P") or letter graded.

801 Quantitative Methods in Business G 4
Derivation and application of analytical, mathematical, and statistical techniques to the solution of recurring management problems.
2 1/2 hr cl. Prereq: Stat 133 or equiv or permission of instructor.
801 • Business Data Modeling
Introduction to quantitative management techniques for first-year doctoral candidates in business administration.
Prereq: Math 503 and grad standing in BUS or permission of instructor.

802 • Business Data Modeling II
Continuation of 801 with emphasis on stochastic modeling techniques.
Prereq: 801.01.

803 • Business Data Modeling III
Emphasis on deterministic modeling techniques for business management problem solving.
Prereq: 801.01. Repeatable to a maximum of 12 cr hrs.

802+ • Systems Research Organization and Methodology
Modeling adaptive management systems of complex organizations such as health, business, and education.
1.5 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

808 • Strategic Decision Making
Study decisions made by organizations to discover common problems and provide skills that overcome these difficulties.
2 hr cl. Prereq: MBA 870 or permission of instructor.

809 • Strategic Management Methods
Use of cases and exercises to explore how strategies and plans are developed and implemented in organizations.
2 hr cl. Prereq: MBA 870 or permission of instructor.

830 • Service/Quality Management
Study of the strategic and tactical issues concerning services in both service and manufacturing industries. Topics include service process re-engineering, performance measurement, service/quality, standards, and employee empowerment.
Prereq: MBA 880 or permission of instructor.

832 • Operations Management Information Systems
Examination of major issues in planning and scheduling in an operations system context; production databases, requirements planning, and scheduling; decision support systems in operations management and computerized manufacturing systems.
Prereq: MBA 880 or permission of instructor.

834 • Strategic Design of Operations/Logistics Systems
Managing systems of people and technology to create capabilities in operations. Emphasis is on new approaches to managing operations and logistics that promise strategic advantage.
Prereq: MBA 880 or permission of instructor.

835 • Operations Planning and Materials Management
The major responsibilities of materials managers; including aggregate planning and master scheduling, inventory management, and scheduling; major issues and strategies including tactical purchasing methods, techniques for analysis, and Japanese manufacturing philosophies will be discussed.
Prereq: MBA 880 or permission of instructor.

826 • Customer Driven Manufacturing in the Global Market
Development of effective linkages between the marketing and manufacturing functions in strategic planning for a business; application to case studies involving U.S. and overseas firms.
Prereq: MBA 880 or permission of instructor.

836 • Forecasting for Decision-Making
Consideration of major forecasting methods with emphasis placed on concepts, applications, and choosing most appropriate method.
Prereq: MBA 880 or permission of instructor.

875 • Quality Management
Principles of quality management with emphasis on manufacturing firms; topics include managerial philosophy, essential technical tools, quality audits, vendor certification, and quality costs.
Prereq: MBA 880 or permission of instructor.

893 • Individual Studies
Individual study projects in selected areas in management sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

894 • Group Studies
Group study projects in selected areas in management sciences.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

901 • Seminar in Management Science
Consideration of advanced topics in management science with an emphasis on quantitative analysis.
Prereq: MBA 880 or permission of instructor.

920 • Current Research in Operations Management
A series of weekly lectures and seminar discussions on current research topics in operations management.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

930 • Special Topics in Operations Management
A critical study of selected topics in operations management focusing on the status of research efforts to date; topics vary.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

998 • Research in Management Sciences: Thesis
Research for thesis purposes only.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

999 • Research in Management Sciences: Dissertation
Research for dissertation purposes only.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

Business Administration: Marketing

500 Fisher Hall, 2100 Neil Avenue, 592-8000.

483 • Individual Studies U 1-10
Individual study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

494 • Group Studies U 1-10
Group study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

650 • Marketing U 4
Critical survey of field of marketing; structure, functions, policies, costs, and problems analyzed from consumer and other viewpoints; emphasis on principles, trends, and quantitative expression.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

693 • Individual Studies U 1-6
Individual study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

694 • Group Studies U 1-6
Group study projects in selected areas in marketing.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

700-level courses are not available for graduate credit for students who have taken undergraduate courses in the same area.

750 • Consumer Behavior U 4
A review and synthesis of behavioral sciences applied to understanding consumer decision process; emphasis on the impact of consumer decisions upon the strategies of business, government, and consumer businesses.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

751 • Managerial Marketing U 4
Marketing policies and strategy; organization, demand analysis, product planning, pricing, physical distribution, and promotion from a managerial viewpoint.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
752 Cases in Managerial Marketing U G 4
Analysis of marketing policies and strategy, with emphasis on actual business cases.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 751.

753 Retail Management U G 4
Principles and methods of management as applied to retailing, including location, organization, personnel, buying, inventory control, selling and advertising, services, expenses, and profits.
Su, Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

755 Promotional Strategy U G 4
Consumer behavior, fundamentals of communication, setting goals and objectives, creative strategy, media strategy, and social and economic issues.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 or equiv.

757 International Marketing U G 4
Theory and practice of marketing across national borders, as well as marketing and market research within different foreign environments, including the development of marketing strategies by the international company.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Adm 555 and Bus-Mgt 330 and 331; or permission of instructor.

758 Marketing Research U G 4
The role of research in the solution of marketing problems; emphasis on available data analysis and methods of the field of investigation.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mgt 330 and 331.

759 Sales Management U G 4
The sales force and its managerial hierarchy.
Au, Wi Qtrs. 2 2-hr cl. Prereq: 650.

780 Micro-Logistics U G 4
Management of logistics activities of the firm from the viewpoint of both the provider and user of logistics system components.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mgt 330 and 331; or permission of instructor.

781 Analysis and Design of Logistics Systems U G 4
Analysis of internal and environmental factors affecting logistics systems and the effect of such factors on the development and implementation of integrated logistics systems.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 780 and Bus-Mgt 330 and 331; or permission of instructor.

782 Logistics Decision Making U G 4
Analysis of decision making in the current logistics environment and the tools needed for finding solutions to logistics problems such as inventory, transportation, and warehouse management.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 780 and Cptrinf 200.

H783 Honors Research U 1-5
Special topics research in marketing and/or transportation and logistics; research evaluated through papers, thesis, and/or special examinations.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in business, 3.40 GPA, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course may be Progress ("P") or letter graded.

784 Principles of Transportation U G 4
Study of general economic characteristics and government regulation of rail, motor, water, air, and pipeline carriers; consideration of competitive relations between modes of transportation, basic aspects of traffic management.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Econ 200 or equiv.

807 Principles and Techniques of Marketing Research G 4
Comprehensive study of marketing research process and value of research to managers; design and execution of industry-sponsored project.
2 2-hr cl. Prereq: 840.

846 Advertising and Promotion Management G 4
Discussion of specific consumer behavior theories that deal with consumer response to advertising and sales promotion tactics application of these theories in practice.
Wi Qtr. 2 2-hr cl. Limited to MBA students.

847 Analysis for Marketing Decisions G 4
Exploration of issues related to data analysis for marketing decisions: costs/benefits of analysis in aggregate; difference between descriptive and structural models; complexities of imperfect information.
Au Qtr. 2 2-hr cl. Prereq: 2nd yr standing in the MBA Program.

848 Building Business Relationships G 4
Exploration of a diversity of factors and actions that drive successful business relationships, and in turn lead to higher customer satisfaction, market share, and profits.
Au Qtr. 2 2-hr cl. Prereq: MBA 840 or equiv and enrollment in structured MBA or permission of instructor.

852 Seminar in Specialized Areas of Marketing G 1-5
Prereq: 650 or equiv; and permission of instructor.

852.06 Channels of Distribution Sp Qtr.

852.07 Marketing Theory Sp Qtr.

852.08 Logistics Wi Qtr.

852.09 Consumer Research Repeatable to a maximum of 10 cr hrs.
A— Research Design in Consumer Behavior.
B— Consumer Behavior Theory.
C— Consumer Decision Making.

854 Consumer Behavior G 4
Development of the consumer decision process and its application to marketing strategy decisions.
Sp Qtr. 2 2-hr cl, lab. Prereq: 850 or MBA 840 or permission of instructor.

858* Multivariate Analysis in Business Research G 4
Advanced consideration of correlational data analysis techniques (regression, discriminant analysis, factor analysis, canonical analysis); emphasis on comparison of techniques and underlying theory and assumptions.
2 2-hr cl. Prereq: 801.01, 801.02, and Stat. 625, or permission of Instructor.

880 Logistics Management G 4
Management of movement services and coordination of demand and supply patterns for optimization of physical systems in terms of cost and customer service.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 650 and Bus-Mgt 830, or equivs.

881 Analysis and Design of Logistics Systems G 4
General logistics problems and solutions including: demand forecasting approaches and techniques; inventory control and deployment; facility location and network design; vehicle scheduling and dispatching algorithms.
Wi Qtr. 2 2-hr cl. Prereq: 880.

884 Field Problems in Logistics G 4
Provides students with supervised opportunities to test their problem solving skills on an actual business problem through developing, executing and evaluating a research design.
Au Qtr. 2 2-hr cl. Prereq: 2nd yr standing in the MBA Program.

885 Supply Chain Management G 4
Analysis and evaluation of emerging patterns of industry behavior illustrative of supply chain management; strategic foundations that support supply chain strategy and operational skills required.
Wi Qtr. 2 2-hr cl. Prereq: 880.

889 Theory of Business Logistics G 4
Critical examination of various theories of the structure and operation of logistics systems; research methodology for testing logistics theory and the application of logistics theory to contemporary logistics problems.
Sp Qtr. 2 2-hr cl.

893 Individual Studies G 1-6
Individual study projects in related areas of marketing.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies G 1-6
Group study projects in selected areas in marketing.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

950* Seminar in Logistics and Distribution Channels G 5
Critical examination of the role of logistics and distribution channel systems in micro- and macro-marketing systems.
Wi Qtr. Prereq: 850 or equiv.

951 Marketing Models G 5
A study of recent model-based research in the marketing literature; emphasis on the strengths and weaknesses of various modeling approaches in specific problem areas and evaluation of model-based research.
Au Qtr. Prereq: 959 or permission of instructor. Repeatable to a maximum of 10 cr hrs.
954 Recent Advances in Marketing Research G G 5

959 Seminar in Contemporary Marketing Problems G G 5

959 Seminar in Contemporary Marketing Thought G G 5

998 Research in Marketing: Thesis G Arr

999 Research in Marketing: Dissertation G Arr

Cell Biology, Neurobiology, and Anatomy

4072 Graves Hall, 335 West 10th Avenue, 292-4831

For related courses see Medicine and Zoology.

199 Basic Human Anatomy U 5

The basics of human anatomy supplemented by computer-assisted instruction and demonstrations of human material. Guy and Turner.
4 1-hr cl, 1 2-hr lab. Not open to students with credit for 200. Not for students planning to take 201.

199.01 Basic Human Anatomy
Au, Wi, Sp Qtrs. Prereq: Health Sciences students in CED and ASC.

199.02 Basic Human Anatomy
Au Qtr. Prereq: Enrollment in pharmacy. Emphasis on nervous, urinary, and digestive systems.

199.03 Basic Human Anatomy
Wi, Sp Qtrs. Prereq: Biology 101 and enrollment in pre-nursing program. Emphasis on clinical relationships.

199.04 Basic Human Anatomy
Wi, Sp Qtrs. Prereq: Enrollment in pre-AMP and AMP only. Emphasis directed toward specialty.

199.05 Basic Human Anatomy
Wi Qtr. Prereq: Enrollment in DHY only. Emphasis on head and neck anatomy.

200 Introductory Anatomy U 6

Fundamental principles of human anatomy, supplemented by demonstrations of human material. Turner.
4.1-hr cl, 2 2-hr labs. Prereq: Confirmed acceptance in programs in phys ther, occ ther, or radi tech. Not open to students with credit for 199.

201 Neuromuscular Anatomy U 5

Neuromuscular anatomy of the human body. Chidsey.
Au Qtr. 2 cl, 2 3-hr labs. Prereq: Enrollment in AMP or permission of instructor.

601 Human Anatomy for Dental Students P 7

Basic principles of embryology, anatomy, histology and neuroanatomy of the human body. Hayes and staff.
Au Qtr. 3 cl, 3 3-hr lab. Prereq: Dent 1st yr standing.

602 Human Anatomy for Dental Students P 7

A continuation of 601. Hayes and staff.
Wi Qtr. 3 cl, 3 3-hr lab. Prereq: 601.

603 Human Anatomy for Dental Students P 7

A continuation of 602. Hayes and staff.
Sp Qtr. 3 cl, 3 3-hr lab. Prereq: 602.

604 Individual Studies in Cell Biology, Neurobiology, and Anatomy U G 2-5, P 6, 12, 18

Designed to enable the student to pursue a minor investigation in some anatomical field of choice.
Su, Au, Wi, Sp Qtrs. 1 month, offered all months. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs for professional credit. This course is graded S/U.

700 Human Histology U G 6

A microscopic study of cells, tissues, and organs with particular emphasis on human; consideration of microscopic structure in relation to function of various organ systems. Hayes.
Sp Qtr. 3 cl, 3 2-hr labs. Prereq: Permission of instructor.

710 Human Embryology G 3 or 5

Designed to acquaint the anatomy graduate student with a basic knowledge of human embryology. Clark.
Au Qtr (starts 3rd week in August). Arr. Prereq: Permission of instructor.

712 Human Anatomy G 12

Designed to acquaint a graduate student with a basic knowledge of human anatomy by regional dissection. Negulesco.
Au Qtr (starts 3rd week in August; ends in mid-November). Arr. Prereq: Permission of instructor.

716 Human Neurobiology G 7

Designed to acquaint a graduate student with a basic knowledge of human neuroanatomy. Bresnahan, and Martin.
Sp Qtr. Arr. Prereq: Permission of instructor.

750 Radiologic Anatomy G 2

Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images. Hines.
Sp Qtr. Arr. Prereq: Satisfactory completion of Med Cell 806, or Anatomy 712 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with Radiology 750.

790 Developmental Neurobiology G 3

Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems. Alley, Beattie, Smith.
Au Qtr. 2 1 hr-cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Cross-listed in Neuroscience.

804 Current Topics in Cell Biology G 5

Advanced studies in selected areas of cell biology, with a focus on the structural components of the cell and an emphasis on interrelationships of cellular compartments. Burry, DePhilip, Kriiss, Robinson, Strauch, and Vandère.
Sp Qtr. Arr. Prereq: Permission of instructor and Biochem 511 or 613 series.

805 Techniques in Cell Biology G 5

A survey of research techniques used to solve problems in modern cell biology including, but not limited to, cell culture, immunochemistry, and electron microscopy. DePhilip.
Sp Qtr. 2 1 1/2 hr-cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Cross-listed in Neuroscience.

850 Seminar in Cell Biology, Neurobiology, and Anatomy G 1

Discussions of research in progress and 'spotlights' from the literature of current anatomical problems.
Su, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

911 Advanced Studies in Cell Biology, Neurobiology, and Anatomy G 3 or 5

Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

911.02 Connective Tissue and Bone
Activities of fibrous connective tissues emphasizing formation and maintenance of fibers and ground substance; dynamics of the structure, chemistry, and metabolism of bone.

911.03 Embryology
Mammalian embryological development: emphasizing descriptive or experimental approach; metabolic aspects of development including enzymatic changes, hormonal effects, environmental factors, and teratogenic agents. Clark.

911.05 Neurobiology
Advanced study of a particular system or systems in the central nervous system, including literature perusal. Beattie, Bishop, Bresnahan, Burry, Clark, King, and Martin.

911.07 Synaptic Organization of the Nervous System
Use of the electron microscope to define and analyze synaptic circuits within the central nervous system. Burry and King.

911.09 Instrumentation and Techniques in Experimental Neurobiology
Practical experience in learning techniques utilized in neuroanatomical research problems. Bishop, Burry, Caix, and Martin.

911.10 Principles of Human Cytogenetics
Human cytogenetics as related to autosomal and sex chromosomes; technique of tissue culture for study of human chromosomes and karyotype analysis. Hayes.

911.13 Topographical Anatomy
Study of unmounded serial cross sections of selected regions of the human head emphasizing the inter-relationship of structures so another in a three-dimensional perspective. Hines, Jones, and Negulesco.
Chemical Engineering

121 Koffolt Laboratories, 140 West 19th Avenue, 292-3591

200 Chemical Engineering and Process Calculations U 3
The application of physico-chemical principles to problems of the chemical industry; emphasis on graphical methods, stoichiometry, heat, and material balances. Chalmers, Ozkan, Rathman, Tomasko.

Au, Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: Chem 123 and En Graph and a minimum GPAHR of 2.00, and prereq or conc: Math 254 and Physics 131.

201 Chemical Engineering and Process Calculations U 3
Continuation of 200. Chalmers, Koelling, Ozkan, Rathman, and Zakin.
Wi, Sp Qtr. 2 cl, 2 comp lab hrs. Prereq: 200 and prereq or conc: Math 255 and Physics 132.

264 Group Studies U 1-6
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

420 Elements of Chemical Engineering—Transport Phenomena I U 4
Introduction to momentum, mass, and heat transfer with emphasis on the analogies between them; practical applications of momentum transfer (fluid flow). Chalmers, Cox, Fan, Koelling, Rathman, Tomasko, Yang, and Zakin.
Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 201, Math 255, and Physics 132, or equiv with written permission of instructor.

499 Professional Practice in Industry U 2
Preparation of a comprehensive report based on employment experience in a co-op job in industry.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Admission to co-op program in chem eng. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

508 Chemical Engineering Thermodynamics I U G 3
Application of the fundamental concepts and laws of thermodynamics to problems of the chemical industry; stress on computational problem work. Hershey, Ozkan, Rathman, and Tomasko.
Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 201 and 420.

509 Chemical Engineering Thermodynamics II U G 3
Continuation of 508. Hershey, Ozkan, Rathman, and Tomasko.
Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 508.

520 Transport Phenomena U G 3
Momentum, mass, and heat transfer emphasis on the analogies between these; practical applications of momentum transfer (fluid flow). Chalmers, Cox, Fan, Koelling, Rathman, Tomasko, Yang, and Zakin.
Sp Qtr. 3 cl. Prereq: Math 255. Not open to students with credit for 420.

521 Elements of Chemical Engineering—Transport Phenomena II U G 3
Continuation of transport theory with emphasis on heat transfer and introduction to radiation; basic principles developed and illustrated with problems from chemical engineering practice. Chalmers, Davis, Koelling, Ozkan, Tomasko, and Yang.
Au Qtr. 2 cl, 2 comp lab hrs. Prereq: 420 or 520, and a second writing course; and prereq or conc: Math 512 or equiv with permission of instructor. GEC course.

522 Elements of Chemical Engineering—Transport Phenomena III U G 3
Continuation of the study of transport theory; emphasis on mass transfer and stagewise operations with applied computational problems. Fan and Tomasko.
Wi Qtr. 2 cl, 2 comp lab hrs. Prereq: 521.

523 Chemical Engineering Operations U G 4
The application of transport phenomena such as fluid, heat, and mass transfer to the chemical engineering operations of evaporation, distillation, drying, etc. Fan and Koelling.
Sp Qtr. 3 cl, 2 comp lab hrs. Prereq: 522 and Chem 532.

610 Chemical Engineering Kinetics U G 3
Chemical and engineering principles for the design and operation of chemical reactors; kinetics of simple homogeneous systems and introduction to heterogeneous catalysis. Chalmers, Ozkan and Rathman.
Sp Qtr. 2 cl, 2 comp lab hrs. Prereq: 509, 522, or Chem 532.

624 Chemical Process Dynamics and Control I U G 3
Study of the dynamics and control of chemical processes; mathematical models of simple processes, including feedback control, state derived, analyzed, and simulated. Bakshi, Davis, and Yang.
Au Qtr. 3 cl. Prereq: 523, 610, 830 and Math 512.

626 Digital Control Techniques in Chemical Engineering U G 3
Study of real-time data acquisition and digital control techniques as applied to chemical processes. Bakshi, Chen, and Davis.
Wi Qtr. 2 cl, 3 lab hrs. Prereq: 624 and En Graph 200, or permission of instructor.

630 Chemical Engineering Operation Laboratory U G 4-8
The fundamental laboratory course in the chemical engineering operations laboratories; investigation of the operating characteristics and efficiency of chemical engineering equipment such as distillation, drying, filtration, etc. Su Qtr. 5 lab, 7-19 lab hrs. Prereq: 523 or equiv with written permission of instructor. GEC course.

663 Coal and Mineral Characterization and Preparation U G 3
Schematic and mathematical description of coal and mineral preparation circuits and the design of preparation units for specific minerals or coal aimed at particular markets. Skidmore.
Su Qtr. 3 cl. Prereq: Math 254 or permission of instructor.

666 Principles of Biochemical Engineering U G 3
Fundamental study of transport phenomena and other biochemical engineering principles with applications in processing of biological materials (animal, vegetable, microorganism). Chalmers and Yang.
Wi Qtr. 3 cl. Prereq: ENG or science sr or grad standing.

693 Individual Studies in Chemical Engineering U G 1-8
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies in Chemical Engineering U G 1-6
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

712 Catalysis and Catalytic Processes U G 3
Sp Qtr. 3 cl. Prereq: 532 and 610.

717 Colloids and Surfaces U G 3
Introduction to various aspects of colloids and surfaces, including sedimentation, diffusion, thermodynamics, light scattering, surface tension, contact angle, and surfactants. Rathman.
Su Qtr. 3 cl. 2-hr cl. Prereq: Math 255, Chem 253, Chem 531 or Chem Eng 509.

728 Chemical Process Dynamics and Control II U G 3
Further development of process dynamics and control topics begun in 824. Bakshi.
Sp Qtr. 3 cl. Prereq: 624 or permission of instructor.

733 Novel Separation Processes U G 3
Introduction to engineering analysis and experimental application of adsorption, ion exchange, membrane processes, and others with applications in gas mixtures and liquid mixtures. Tomasko.
Wi Qtr. 1 3-hr cl for 8 wks, 6 hrs lab/wk for 2 wks. Prereq: 522 or 815.02 and 523, Math 512, or permission of instructor.

739 Knowledge-Based Systems in Engineering U G 3
Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation. Davis.
Wi, Sp Qtr. 2 1 1/2-hr cl. Prereq: Cptrinf 639 or permission of instructor. Cross-listed in Computer and Information Science, Civil, Mechanical, and Nuclear Engineering.
750 Professional Chemical Engineering U G 1
The roles in professional activities performed by chemical engineers, code of ethics, professional registration, professional societies, responsibilities to management and to labor and as an administrator. Fan and Zakin. 
Au, Sp Qtr. 1 cl. Prereq: Jt standing. Progress graded Sp Qtr. credit/grade awarded upon completion of Au Qtr.

760 Chemical Engineering Economy and Strategy U G 4
Economic and strategic considerations in research; development, design, and manufacturing in the chemical process industry; cost estimation and economic optimization of chemical engineering operations and chemical processes. Cox and Fan. 
Au Qtr. 3 cl. 1 recitation. Prereq: 610 and 630. GEC course.

761 Chemical Engineering Processes U G 3
Integration of fundamentals of chemistry, chemical engineering operations, thermodynamics, reaction kinetics, and economics for optimum design and operation of chemical process plants. L. J. Lee and Zakin. 
Au Qtr. 2 cl. 2 comp lab hrs. Prereq: Sr standing in chem eng or chem.

762 Chemical Engineering Process Development U G 4
Library, laboratory, and pilot plant research and development of chemical processes of industrial potential justified by preliminary economic studies; preparation of optimum process flow sheets; plant design studies. Chalmers, L. J. Lee and S. T. Yang. 
Au, Wi Qtr. 1 cl. 11 lab hrs. Prereq: 610, 630, and prereq or concourse 760. GEC course.

763 Special Problems in Process Design U 2
Analysis of definite problems having theoretical and practical application to the chemical industry; individual effort guided by a chemical engineering staff member. Hershey.
Wi Qtr. 8 hrs cont. and lab. Prereq: or concourse 760.

764 Chemical Engineering Process Design U G 4
Process design studies on selected chemical processes encompassing a broad spectrum of fundamental engineering principles; optimization studies utilizing economic and technical simulation. Balashe, Cox and Davis. 
Sp Qtr. 2 cl. 2 4-hr labs. Prereq: 762. GEC course.

766 Biotechnology and Bioprocess Engineering U G 3
Fundamentals of biotechnology and their applications to bioprocessing with emphasis on fermentation and biodegradation. Clamh and Yang. 
Sp Qtr. 3 1-hr cl. Prereq: 666 or BioChem 511 or Microbiol 520 or equiv, or permission of instructor. Continuation of Chem Eng 695.

767 Coal Liquefaction Process U G 3
Definition of design features for special operations in coal liquefaction; exposition of structure-reactivity relation and description of competing liquefaction technologies including in-situ coal liquefaction. 
Wi Qtr. 3 cl. Prereq: Math 254 or permission of instructor.

769 Coal Gasification Processing U G 3
Description, analysis, and design of important units in coal gasification processes. 
Sp Qtr. 3 cl. Prereq: Math 254 or permission of instructor.

771 Air Pollution U G 3
Sources of air pollutants, properties of small particles, chemistry of air pollution, dispersion and deposition of air pollutants, and air pollution control. Hershey. 
Wi Qtr. 3 cl. Prereq: ENG sr standing or permission of instructor.

773 Introduction to High Polymer Engineering U G 3
Engineering of polymerization and polymer forming processes based upon thermodynamics, transport phenomena, and reaction kinetics; relationships of engineering properties of high polymers to molecular characteristics. Koehler and L. J. Lee. 
Au Qtr. 3 cl. Prereq: 610 and organic chem or permission of instructor.

775 Rheology of Flows U G 3
Principles of rheology including the characteristics of non-Newtonian materials, rheological equations of state, viscometric flows, measurements and applications to the flow of industrial materials. Brodkey, Koehler, and Zakin. 
Sp Qtr. 3 cl. Prereq: 420 or 520 or equiv with written permission of instructor.

776 Principles of Polymer Conversion Operations U G 3
Principles of thermodynamics, transport phenomena, polymer chemistry and physics will be related to polymer processing (converting high polymers) through application of mathematical and analytical approaches. Koehler and L. J. Lee. 
Wi Qtr. 3 cl. Prereq: 773 or permission of instructor.

779 Chemical Engineering Experimental Design U G 3
Industrial and research experiments designed with special emphasis on reducing the number of experiments, interpreting final results, and ensuring against unknown factors. Hershey. 
Au Qtr. 3 cl. Prereq: Engr Graph 197 or equiv or permission of instructor.

781 Chemical Engineering Optimization U G 3
Description, analysis, and comparison of the techniques in use in unimodel optimization: linear programming; geometric programming. Hershey. 
Sp Qtr. 3 cl. Prereq: Engr Graph 167 or equiv or permission of instructor.

783 Undergraduate Honors Program Research U 1-3
Opportunity for honors students to pursue independent project/research. Thesis writing and oral presentations included. 
Su, Wi, Sp Qtr. Attr. Prereq: Sr standing in chem eng. GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 6 cr hrs.

790 Process Modeling and Simulation U G 3
Application of basic chemical engineering principles to construct mathematical models of industrial processes and the simulation thereof by digital and analog techniques. Fan. 
Au Qtr. 3 cl. Prereq: Permission of instructor.

801 Advanced Special Problems in Chemical Engineering G 1-15
A minor problems course covering the chemical engineering operation, instrumentation, thermodynamics, kinetics, the transport fields, and chemical technology. 
Su, Wi, Sp Qtr. Conf. library, and/or lab. Prereq: Satisfactory courses in field of problem undertaken and permission of instructor. Repeatable to a maximum of 15 cr hrs.

808 Advanced Chemical Engineering Thermodynamics I G 3
Detailed discussion of the thermodynamic properties of pure compounds and mixtures; computational problem work emphasizes the application of thermodynamics in industrial problems. Davis, Hershey, Rathman and Tomasko.
Sp Qtr. 3 cl. Prereq: 609 or equiv with written permission of instructor.

812 Advanced Chemical Engineering Kinetics I G 3
Chemical engineering kinetics from the viewpoint of industrial chemical processes. Chalmers, Fan, and Ozbek. 
Au Qtr. 3 cl. Prereq: 523 and 610; or permission of instructor.

813 Advanced Chemical Engineering Kinetics II G 3
Continuation of 812. 
Wi Qtr. 3 cl. Prereq: 812.

815 Advanced Chemical Engineering Science and Applications G 3
Advanced concepts of science and engineering as applied to the chemical engineering field under various topics. 
Au, Wi, Sp Qtr. 3 cl. Prereq: Chem eng grad standing or permission of instructor. Repeatable to a maximum of 45 or hrs. Subdivisions are not repeatable.

815.01 Advanced Mass Transfer—I 
Fan and Tomasko.

815.02 Advanced Mass Transfer—II 

815.05 Advanced Heat Transfer—I 

815.08 Advanced Momentum Transfer—I 
Basic theory, laminar flow, and phenomenon on turbulence Brodkey and Koehler.

815.09 Advanced Momentum Transfer—II 
Turbulence, mixing, and chemical reaction. Brodkey.

815.10 Advanced Momentum Transfer—III 
Two-phase phenomena. Brodkey.

815.15 New or Unusual Chemical Engineering Operations Examples: adsorption, atmospheric, dialysis exclusion, sublimation.

881 Seminar in Chemical Engineering G 3
Formal reports, lectures, and discussions of fundamentals and new developments in science and technology as related to chemical engineering. 
Su, Sp Qtr. 3 cont hrs. Prereq: Grad standing in chem eng. Repeatable to a maximum of 12 or hrs.

981 Research Seminar in Chemical Engineering G 2
Formal reports, lectures, and discussions of research topics in chemical engineering. 
Su, Au, Wi, Sp Qtr. Prereq: Grad standing in chem eng.

999 Research in Chemical Engineering G Arr 
Research for thesis or dissertation purposes only. 
Su, Au, Wi, Sp Qtr. This course is graded S/U.
Chemical Physics

Undergraduate Chemistry Office: 100 Celeste Laboratory of Chemistry, 120 West 18th Avenue, 292-1204
Department Office: 1118 Newman-Wolfrum Laboratory of Chemistry, 100 West 18th Avenue, 292-2521.

1001 Chemistry and Society U 5
Terminology, methods, and principles of chemistry; examination of the roles of chemistry in our modern technological society.
Au, Wi, Sp Qtrs. 5 cr. Prereq: Math 075 or 078 or 102 or satisfactory score on the Ohio State Math Placement Test. Not open to students with credit for 101, 121, H201, or 204 or chem courses having these as prereqs.

101 Elementary Chemistry U 5
Introductory general chemistry for non-science majors, including dimensional analysis, atomic structure, bonding, chemical reactions, states of matter, solutions, chemical equilibrium, and acids and bases.
Su, Au, Wi, Sp Qtrs. 4 cr. 3 lab hrs. Prereq: Eligibility to enroll in Math 110. Not open to students with credit for 121, H201, or 204. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

102 Elementary Chemistry U 5
Introductory organic and biological chemistry, including saturated and unsaturated hydrocarbons, alcohols, ethers, aldehydes, ketones, carboxylic acids, esters, amines, steroids, carbohydrates, lipids, proteins, and nucleic acids.
Au, Wi, Sp Qtrs. 4 cr. 3 lab hrs. Prereq: 101. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

121 General Chemistry U 5
First course for science majors and engineering students, covering dimensional analysis, atomic structure, the mole, stoichiometry, chemical reactions, electron configuration, periodicity, bonding, and molecular structure.
Su, Au, Wi, Sp Qtrs. 4 cr. 3 lab hrs. Prereq: One unit of high school chemistry and eligibility to enroll in Math 150. Not open to students with credit for H201 or 204. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

122 General Chemistry U 5
Concentration of 121 for science majors, covering acids and bases, redox reactions, gases, liquids, solids, solutions, colligative properties, thermodynamics, kinetics, and chemical equilibrium.
Su, Au, Wi, Sp Qtrs. 4 cr. 3 lab hrs. Prereq: 121 or completion of 101 with a grade of A or B and eligibility to enroll in Math 150. Not open to students with credit for 125 or H202 or 205. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course. NS Admis Cond course.

123 General Chemistry U 5
Concentration of 122 for science majors, covering solubility and ionic equilibria, qualitative analysis, electrochemistry, descriptive chemistry, coordination compounds, and nuclear chemistry.
Su, Au, Wi, Sp Qtrs. 3 cr. 6 lab hrs. Prereq: 122. Safety glasses must be worn in lab. This course is available for EM credit. GEC phys sci course.

125 Chemistry for Engineers U 4
Concentration of 121 for engineering students (other than chemical engineers), covering states of matter, solutions, thermodynamics, kinetics, equilibrium, acids, bases, electrochemistry, and organic chemistry.
Au, Wi, Sp Qtrs. 3 cr. 3 lab hrs. Prereq: 121; prereq or concr. Math 151. Not open to students with credit for 122 or 123. This course is available for EM credit. Safety glasses must be worn in lab.

H201 General Chemistry U 5
Fundamental chemical principles for selected students.
Au Qtr. 4 cr. 3 lab hrs. Prereq: ACT mathematics score of 30 or above and ACT science reasoning score of 28 or above; prereq or concr. Math 151; or permission of instructor. Safety glasses must be worn in lab. GEC phys sci course. NS Admis Cond course.

H202 General Chemistry U 5
Continuation of H201; fundamental principles and nonmetal chemistry. Wi Qtr. 4 cr. 3 lab hrs. Prereq: H201. Safety glasses must be worn in lab. GEC course. NS Admis Cond course.

H203 General Chemistry U 5
Continuation of H202; fundamental principles and chemistry of metals. Sp Qtr. 3 cr. 5 lab hrs. Prereq: H202. Safety glasses must be worn in lab. GEC phys sci course.

221 Analytical Chemistry U 5
Analytical chemistry for chemistry majors; quantitative analysis of the elemental and molecular composition of complex systems.
Au, Wi, Sp Qtrs. 3 cr. 8 lab hrs. H211 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 123 or equiv and eligibility to enroll in Math 151. Safety glasses must be worn in lab. GEC phys sci course.

231 Introductory Organic Chemistry U 3
A condensed presentation of organic chemistry organized by functional groups with an emphasis on practical applications.
Sp Qtr. 4 cr. Prereq: 122 or 125. Not open to students with credit for 202 or 251.

245 Organic Chemistry Laboratory U 2
Introduction to the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds.
Au, Wi, Sp Qtrs. 1 cr. 6 lab hrs. Prereq or concr: 231 or 251. Not open to students with credit for 243 or 254. Safety glasses must be worn in lab.

246 Organic Chemistry Laboratory U 2
Preparation, isolation, purification, and identification of organic compounds such as are studied in 251 and 252.
Su, Wi, Sp Qtrs. 1 cr. 5 lab hrs. Prereq: 243 or 245; prereq or concr: 252. Not open to students with credit for 244 or 255. Safety glasses must be worn in lab.

251 Organic Chemistry U 3
Structure, nomenclature, physical properties, preparation, and reactions of hydrocarbons, alcohols, and ethers.
Au, Wi, Qtrs. 4 cr. H251 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 123 or H203.

252 Organic Chemistry U 3
Chemistry of carbon compounds, acids and their derivatives, and amines and aromatic compounds.
Wi, Sp Qtrs. 4 cr. H252 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 251.

253 Organic Chemistry U 3
Selected topics in organic chemistry such as: carbohydrates, amino acids, nucleic acids, spectroscopic methods, polymers, and molecular orbital theory.
Au, Wi, Sp Qtrs. 4 cr. H253 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 252.

254 Organic Chemistry Laboratory U 3
Introduction to the laboratory techniques of organic chemistry, including synthesis, isolation, purification, and identification of organic compounds.
Au, Wi, Sp Qtrs. 1 cr. 3 lab hrs. H254 (honors) may be available to students enrolled in an honors program with permission of instructor. Prereq for 254: Prereq or concr: 252. Prereq for H254: 252 or permission of instructor. Not open to students with credit for 243-244. Safety glasses must be worn in lab.

255 Organic Chemistry Laboratory U 3
Continuation of 254.
Wi, Sp Qtrs. 1 cr. 3 lab hrs. H255 (honors) may be available to students enrolled in an honors program with permission of instructor. Prereq for 255: 252 and 254. Prereq for H255: 252, 254, and permission of instructor. Safety glasses must be worn in lab.

294 Group Studies U 3-5
Special studies in chemistry.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

520 Physical Chemistry U G 3
The principles of physical chemistry for students in the biological sciences and for BA students majoring in chemistry.
Wi Qtr. 3 cr. Prereq: 211 or 221 or 251, Math 153, and Physics 113 or 133. Not open to students with credit for 581 or 581.

521 Physical Chemistry U G 3
A continuation of 520.
Sp Qtr. 3 cr. Prereq: 520. Not open to students with credit for 532.
531 Physical Chemistry U G 3
The fundamental course in physical chemistry.
Au Qtr. 3 cl. Prereq: 211 or 221 or 251, or equiv; Physics 113 or 133 and Math 254; prerequisite or concurs: Math 255; and concurs 541 recommended for chem majors.

532 Physical Chemistry U G 3
Continuation of 531.
Wi Qtr. 3 cl. Prereq: 531; concurs 542 recommended for chem majors.

533 Physical Chemistry U G 3
Continuation of 532.
Sp Qtr. 3 cl. Prereq: 532.

541 Physical Chemistry Laboratory U G 3
Quantitative measurements of chemical phenomena and the application of chemical principles to their interpretation.
Au, Wi, Sp Qtrs. 1 cl, 8 lab hrs. Prereq or concurs: 520 or 531. Safety glasses must be worn in lab.

542 Physical Chemistry Laboratory U G 3
Continuation of 541.
Au, Wi, Sp Qtrs. 6 lab hrs. Prereq: 541; prerequisite or concurs: 521 or 532. Safety glasses must be worn in lab.

585 Research Principles in Chemistry U 1-5
Independent chemical investigation under the direction of a faculty member, culminating in written and oral reports.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 15 cr hrs in chem at the 200 level or above and written permission of instructor under whose direction the student will work. Repeatable to a maximum of 20 cr hrs.

587 Analytical Chemistry II: Instrumental Analysis U G 3
Applications of physico-chemical principles to problems of quantitative analysis.
Sp Qtr. 3 cl. Prereq or concurs: 521 or 532, and 541.

588 Laboratory Practice in Instrumental Analysis U G 3
Laboratory applications of physico-chemical principles to instrumental analysis.
Sp Qtr. 2 3-hr labs. Prereq or concurs: 587 or permission of instructor. Safety glasses must be worn in lab.

623 Chemical Instrumentation U G 3 or 5
Background theory and laboratory applications in the use of electrical and electronic instruments in chemical research.
Su Qtr. 2 cl, 9 or 15 lab hrs. Prereq: 535, prerequisite or concurs Physics 133, and Math 255 or equiv.

632 Spectroscopic Methods in Organic Chemistry U G 3
Advanced spectroscopic methods in organic chemistry, including proton and carbon NMR, IR, UV, and mass spectrometry.
Sp Qtr. 3 cl. Prereq: 253 or permission of instructor.

6351 Chemistry of the Carbohydrates U G 3
Sp Qtr. 3 cl. Prereq: 252 or equiv. Repeatable to a maximum of 6 cr hrs with permission of instructor.
A—Monosaccharides. (Given in even-numbered yrs.)
B—Oligosaccharides and Poly saccharides. (Given in odd-numbered yrs.)

651 Inorganic Chemistry I U G 3
Introduction to the principles of inorganic structure and bonding, including molecular symmetry, atomic structure, molecular, and ionic bonding.
Au Qtr. 3 cl. Prereq: 253 or permission of instructor.

652 Inorganic Chemistry II U G 3
Chemistry of the transition metals, with emphasis on the stereochemistry, reaction mechanisms, and chemical reactivity of coordination complexes and organometallics.
Wi Qtr. 3 cl. Prereq: 651 or permission of instructor. Not open to students with credit for 751.

661 Biochemistry U G 3
A survey of biochemistry for the superior advanced undergrad or the beginning grad student who does not necessarily plan to do grad resrch in biochemistry.
Prereq: 253 and 521 or 552. Not recommended for students with grades of C or below in prerequisite courses.

661.01 Biochemistry
Au Qtr. 3 cl.

661.02 Biochemistry
Wi Qtr. 3 cl.

571 Nuclear, Radio, and Radiation Chemistry U G 3
Nuclear properties, nature of radioactivity, radioactive decay and growth, interactions of radiation with matter, applications.
Au Qtr. 3 cl. Prereq: 533 or equiv.

673 Introduction to Quantum Chemistry and Spectroscopy U G 3
Fundamental quantum chemistry with applications to molecular spectroscopy, suitable for all areas of chemistry.
Su Qtr. 3 cl. Prereq: 533 or equiv; or permission of instructor. Not open to students with credit for 861.

685 Safety Seminar U G 2
A survey of safety procedures and protocols to be followed in a laboratory environment.
Wi Qtr. 1 ½-hr cl. This course is graded S/U.

693 Individual Studies U G 1-15
A qualified student may conduct a minor investigation in chemistry.
Su, Au, Wi, Sp Qtrs. Conf. library, and lab. Prereq: Satisfactory courses in field of the problem and permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Designed for students to pursue advanced special studies in chemistry.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs.

701 Seminar in Teaching College Chemistry G 3
Preparation for teaching lower-division chemistry laboratory and recitation sections.
Su Qtr. 2 2-hr cl. Prereq: Permission of Graduate Advising Committee.

721 Advanced Analytical Chemistry U G 3
Chemical and instrumental aspects of modern methods of analysis, emphasizing commonly used contemporary techniques of value to the research chemist.
Au Qtr. 3 cl. Prereq: 587 or equiv or permission of instructor.

722 Principles of Analytical Processes U G 3
Speciation and multicomponent equilibria, analog versus digital data acquisition, applications of Fourier transforms, modeling chemical systems.
Wi Qtr. 3 cl. Prereq: 531.

730 Intermediate Organic Chemistry U G 3
Intermediate-level course for advanced undergraduates and beginning graduate students in organic reactions and mechanisms.
Au Qtr. 3 cl. Prereq: 253. Recommended for entering grad students in organic chemistry.

731 Advanced Organic Chemistry I U G 3
Fundamental aspects of physical organic chemistry.
Au Qtr. 3 cl. Prereq: 253, 521 or 553, or permission of instructor. 730, 731, 852, and 853 comprise the first-year graduate sequence.

733 Chemistry of Bio-Organic Catalysts and Enzymes U G 3
Mechanisms of organic catalysis and enzymes; for students majoring in organic chemistry and biochemistry.
Wi Qtr. 3 cl. Prereq: 253 or equiv; also desirable to have undergraduate level physical chemistry and biochemistry.

750 Fundamental Principles of Inorganic Chemistry U G 3
Theory and application of modern inorganic chemistry for students who intend to take additional courses in chemistry.
Su Qtr. 3 cl. Prereq: Undergraduate degree in chemistry or permission of instructor.

751 Transition-Metal Organometallic Chemistry U G 3
Preparation, structure and bonding, reactivity, and applications to stoichiometric synthesis and catalysis of transition-metal compounds that contain metal-carbon bonds, including metal carbonyls, pi-complexes, and metal allyls.
Au Qtr. 3 cl. Prereq: Permission of instructor or an undergraduate degree with a major in chem.

752 Inorganic Biochemistry U G 3
Roles of metal ions as biological redox and catalytic effectors, coordination chemistry; spectroscopy and electrophoresis.
Au Qtr. 3 cl. Prereq: 652 and undergraduate degree with a major in chemistry, or permission of instructor.

753 Inorganic Cluster Chemistry U G 3
Bonding, structures, and chemistry of cluster and ring compounds of the transition and main group elements with applications to heterogeneous catalysis and inorganic polymers.
Wi Qtr. 3 cl. Prereq: 652 and undergraduate degree with a major in chemistry, or permission of instructor.
754 Solid State Inorganic Chemistry U G 3
Survey of the principles and concepts underlying the synthesis, structure, bonding, reactivity, and properties of solids.
Sp Qtr. 3 cl. Prereq: 533 or equiv or permission of instructor.

755 Inorganic Chemistry Laboratory U G 3
Preparation and characterization of inorganic compounds employing a variety of synthetic techniques.
Wi Qtr. 9 lab hrs. Prereq: 533, permission of instructor, or an undergraduate degree with a major in chemistry. Safety glasses must be worn in lab. Not open to students with credit for 655.

761 Advanced Biochemistry: Proteins U G 3
An advanced treatment of protein biochemistry.
Au Qtr. 3 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivalents. Not open to students with credit for Biochem 705 or 762, or MBiochem 705 or 762. Cross-listed in Biochemistry and Medical Biochemistry.

782 Advanced Biochemistry: Enzymes U G 3
Advanced treatment of enzymology.
Au Qtr. 2 1½-hr cl. Prereq: 253, 255, and 521; and Biochem 615; or equivalents. Cross-listed in Biochemistry and Medical Biochemistry.

763 Advanced Biochemistry: Membranes and Bioenergetics U G 3
An advanced treatment of membranes and bioenergetics.
Wi Qtr. 3 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivalents. Cross-listed in Biochemistry and Medical Biochemistry.

764 Advanced Biochemistry: Integration of Metabolism U G 3
An advanced treatment of the regulation and integration of mammalian biochemical systems.
Sp Qtr. 3 cl. Prereq: 253, 255, and 521; and Biochem 615; or equivalents. Cross-listed in Biochemistry and Medical Biochemistry.

765 Advanced Biochemistry: Physical Biochemistry U G 2
Diffusion, electrophoresis, sedimentation; light and X-ray scattering, X-ray and neutron diffraction, fluorescence, polarimetry, mass spectroscopy, nuclear magnetic resonance.
Wi Qtr. 2 cl. Prereq: 253, 255, 521; and Biochem 615; or equivalents. Cross-listed in Biochemistry and Medical Biochemistry.

783 Honors Research U 3-5
Independent investigation in chemistry culminating in a thesis and an oral examination.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the chem courses and an average of B in the remainder; permission of instructor; under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Not open to students with credit for Biochem 705, MBiochem 764 or Phycys 764. Cross-listed in Chemistry and Medical Biochemistry.

821 Electroanalytical Chemistry G 3
Advanced level discussion of electrochemical principles and mass transport processes; discussion of applications to organic and inorganic systems.
Sp Qtr. 3 cl. Prereq: 532 or permission of instructor.

822 Principles and Practice of Separation Processes G 3
Principles and applications of equilibrium and kinetic separation processes such as precipitation, solvent extraction, ion exchange, liquid-liquid chromatography, gas-liquid chromatography, and zone refining.
Au Qtr. 3 cl. Prereq: 821 or permission of instructor.

823 Analytical Spectroscopy G 3
Advanced course in the principles of measurement of the interaction of electromagnetic radiation with matter.
Sp Qtr. 3 cl. Prereq: 821 or permission of instructor.

831 Physical Organic Chemistry G 3
Thermodynamics, kinetics, and mechanisms of organic reactions with a particular focus on organic reactive intermediates.
Wi Qtr. 2 1½-hr cl. Prereq: 731.

832 Advanced Organic Chemistry II G 3
An advanced course in the fundamental principles of chemistry covering aliphatic, hydroaromatic, and aromatic compounds.
Wi Qtr. 3 cl. Prereq: 731.

833 Advanced Organic Chemistry III G 3
An advanced course in the fundamental principles of chemistry covering a survey of heterocyclic compounds, carbohydrates, proteins, and enzymes.
Sp Qtr. 3 cl. Prereq: 832.

835 Advanced Organic Chemistry Laboratory G 3 or 5
An advanced course in fundamental reactions and procedures with emphasis on recent advances in technique.
Su Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab.

836 Advanced Organic Chemistry Laboratory G 3 or 5
Continuation of 835.
Su Qtr. 9 lab hrs. Prereq: Permission of student's grad adviser. Safety glasses must be worn in lab.

851 Advanced inorganic Chemistry G 3
A survey of modern theories of valence and their application to the problems of structural inorganic chemistry.
Sp Qtr. 3 cl. Prereq: 533 and 652 or 752 or permission of instructor.

861 Quantum Chemistry I G 3
Basic quantum mechanics as a foundation for quantum chemistry; postulates, operators, eigenfunctions, eigenvalues, and Schrödinger wave equations; one-dimensional problems including the harmonic oscillator.
Au Qtr. 3 cl. Prereq: 533, Math 255 or 415 or equiv, and Physics 133.

862 Quantum Chemistry II G 3
Angular momentum; matrix elements and representations; the hydrogenic atom; perturbation and variational methods, electron spin, and the helium atom; atomic structure and multiplet theory.
Wi Qtr. 3 cl. Prereq: 861 or equiv.

863 Quantum Chemistry III G 3
Electronic structure of molecules; hydrogen molecule and ion, methane, ethylene, benzene, etc.; molecular orbital, valence bond, and self-consistent field methods.
Sp Qtr. 3 cl. Prereq: 862.

866 Electronic Spectra and Structure of Molecules G 3
Application of quantum mechanics to the description and interpretation of molecular spectroscopic data with an emphasis on electronic transitions of polyatomic molecules.
Sp Qtr. 3 cl. Prereq: 863 or equiv or permission of instructor.

875 Chemical Kinetics I G 3
Fundamentals of chemical kinetics in homogeneous liquid and gaseous systems.
Au Qtr. 3 cl. Prereq: 533.

8761 Chemical Kinetics II G 3
Continuation of 875; elementary reactions; chain reactions; fast reaction methods; reaction rates in heterogeneous systems.
Wi Qtr. 3 cl. Prereq: 875.

8771 Radiation and Photochemical Kinetics G 3
The physical and chemical effects of the absorption of radiant energy, with emphasis on kinetics and mechanism.
Wi Qtr. 3 cl. Prereq: 875.

881 Thermodynamics I G 3
Introduction to thermodynamics; emphasis on training in the use of thermodynamics as a tool for solving chemical problems.
Wi Qtr. 3 cl. Prereq: 875 or equiv.

882 Statistical Thermodynamics G 3
An introduction to statistical thermodynamics, including quantum statistics, entropy and the third law, statistical-spectroscopic calculation of thermodynamic functions of gases, chemical equilibrium, and vapor pressure.
Sp Qtr. 3 cl. Prereq: 881.

885 Colloquium in Chemistry G 1
A discussion of current research in chemistry; all divisions.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 8 cr hrs.

941 Theoretical Organic Chemistry G 3
An advanced course in a special topic in organic chemistry; topic to be announced.
Au Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.
942 Theoretical Organic Chemistry G 3
An advanced course in a special topic in organic chemistry; topic to be announced.
Wi Qtr. 3 cl. Prereq: 832 and 2nd yr grad standing, or permission of instructor.

944 Computational Chemistry G 3
A practical and theoretical introduction to computational chemistry.
Su Qtr. 3 cl. Prereq: Permission of instructor.

990 Seminar on Topics in Biochemistry G 3
Advanced topics in the biological aspects of chemistry.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

991 Seminar in Analytical Chemistry G 3
Topic to be announced.
Au Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

992 Seminar in Organic Chemistry G 3
Topic to be announced.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 832 and chem 2nd yr grad standing, or equiv and permission of instructor. Repeatable to a maximum of 12 cr hrs.

995 Seminar in Inorganic Chemistry G 3
Topic to be announced.
Wi Qtr. 3 cl. Prereq: 752 or equiv and permission of instructor. Repeatable to a maximum of 6 cr hrs.

996 Seminar in Theoretical Chemistry G 3
Advanced topics in theoretical chemistry including quantum mechanics of molecular wave functions, energies, rate processes, and quantum and statistical mechanics of condensed phases.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 863 or equiv. Repeatable to a maximum of 9 cr hrs.

999 Research in Chemistry G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Chinese

204 Cunz Hall, 1841 Millikin Road, 292-5816

101 Level One Chinese I
Mandarin Chinese spoken communication and writing system.
Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.

101.01 Classroom Track U 5
Au Qtr. 5 cl. Students register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.01 or 102.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.

102 Level One Chinese II
Continuation of 101.
Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

102.01 Classroom Track U 5
Wi Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with a demonstrated proficiency at the level of 80% required for advancement.

103 Level One Chinese III
Continuation of 102.
Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.01 Classroom Track U 5
Sp Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

103.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104.01 or 104.51. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to next level.

104 Level Two Chinese I
Mandarin Chinese intermediate level spoken communication, development of reading skills, and written composition.
Prereq: 103 or 103.01 or 5 cr hrs of 103.51. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

104.01 Classroom Track U 5
Au Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

104.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Prereq: 103 or 103.01 or 5 cr hrs of 103.51. Students register for and complete 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 205. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to the next level.

110 Intensive First Year Chinese U 5, 10, 15
Elementary modern Chinese (Mandarin) for students desiring comprehensive knowledge and skills of Chinese in shortest possible time.
Su Qtr. 15 cl. Prereq: Permission of instructor. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, 103. Not open to students with maximum allowable credit for 112. Students may not register for any other course if they enroll in 110. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in Chinese will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. FL Admis Cond course. GEC for lang course.

205 Level Two Chinese II U 5
Continuation of 104.
Wi Qtr. 5 cl. Prereq: 104 or written permission of instructor. This course is available for EM credit.

206 Level Two Chinese III U 5
Continuation of 205.
Sp Qtr. 5 cl. Prereq: 205 or written permission of instructor. This course is available for EM credit.

210 Intensive Second Year Chinese I U 5
First course in the sequence of intensive intermediate Chinese courses; attention to the four language skills: listening, speaking, reading, and writing.
Au Qtr. 5 cl. Prereq: 103 or equiv. or permission of instructor; concord 211. Not open to students with credit for 104, 111, or 205. Students must register for 210 and 211 concurrently.

211 Intensive Second Year Chinese II U 5
Second course in the sequence of intensive intermediate Chinese courses; attention to the four language skills: listening, speaking, reading, and writing.
Au Qtr. 5 cl. Prereq: 103 or equiv. or permission of instructor; concord 210. Not open to students with credit for 104 or 205. Students must register for 210 and 211 concurrently.

231 Traditional Chinese Culture U 5
Chinese institutions, philosophical trends, religion, art, and literature prior to the 20th century.
Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums cultures and ideas course.

232 Modern Chinese Culture U 5
Modern Chinese culture as reflected in family life, language, literature, art, etc.
Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums cultures and ideas course.

251 Chinese Literature in Translation U 5
Representative masterpieces from 3,000 years of Chinese literature, fiction, drama, prose, and poetry in English translation.
Au, Wi, Sp Qtrs. 5 cl. GEC arts and hums lit course.

283 Chinese Calligraphy U 3
Techniques of writing Chinese characters with a brush; practice in different styles from oracle bone to grass.
Wi Qtr. 3 cl. Knowledge of Chinese not required. VPA Admis Cond course.
293 Individual Studies U 1-5
Individual investigation of problems in Chinese culture, language, and literature. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded Su/U.

294 Group Studies U 1-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

310 Intensive Second-Year Chinese I U 5
Fourth course in the sequence of intensive intermediate Chinese courses; use of authentic materials (selections from newspapers, radio broadcasts, television programs, etc.). Wi Qtr. 5 cl. Prereq: 210 and 211 or equiv, or permission of instructor; concurs: 311. Students must register for 310 and 311 concurrently.

311 Intensive Second-Year Chinese II U 5
Fifth course in the sequence of intensive intermediate Chinese courses; use of authentic materials (selections from newspapers, radio broadcasts, television programs, etc.). Wi Qtr. 5 cl. Prereq: 210 and 211 or equiv, or permission of instructor; concurs: 310. Students must register for 310 and 311 concurrently.

501 Chinese Poetry in Translation U G 5
Major genres of Chinese poetry from 600 B.C. to the 13th century A.D. Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums II course.

502 Chinese Fiction in Translation U G 5
Novels and short stories from the Ming and Qing dynasties. Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums II course.

503 Modern Chinese Literature in Translation U G 5
Modern Chinese literature from the 1940s to the present day. Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums II course.

504 Chinese Drama in Translation U G 5
The development of Chinese drama from the Yuan dynasty to modern times. Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums II course.

507 Level Three Chinese I U G 5
Continued study of spoken Chinese, including basic Chinese vocabulary, grammar, and reading of Chinese literature. Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

508 Level Three Chinese II U G 5
Continuation of 507. Wi Qtr. 5 cl. Prereq: 507 or permission of instructor.

509 Level Three Chinese III U G 5
Continuation of 508. Sp Qtr. 5 cl. Prereq: 508 or permission of instructor.

510 Intensive Third-Year Chinese I U G 5
Sixth course in the sequence of intensive intermediate Chinese courses; organized around a set of videotaped lessons (television newscasts, commercials, movies) and a series of genre-specific samples of Chinese. Sp Qtr. 5 cl. Prereq: 310 and 311 or equiv, or permission of instructor; concurs: 511.

511 Intensive Third-Year Chinese II U G 5
Seventh course in the sequence of intensive intermediate Chinese courses; organized around a set of videotaped lessons (television newscasts, commercials, movies) and a series of genre-specific samples of Chinese. Sp Qtr. 5 cl. Prereq: 310 and 311 or equiv, or permission of instructor; concurs: 510.

514 Advanced Chinese Conversation and Composition U 3
Practice in conversation, discussion, oral reports, and short speeches at an advanced level; use of various taped materials; theme-writing exercises; conducted entirely in Chinese. Au Qtr. 3 cl. Prereq: 214 and 508, or permission of instructor.

580 The Chinese Language: Description and Analysis U G 5
Important elements of the Chinese language, its structure, dialects, writing system, as well as language use and planning; taught in English. Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: 103 or equiv or permission of instructor. GEC 3rd writing course.

601 Classical Chinese I U G 5
Selected readings from representative authors of classical times. Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.

602 Classical Chinese II U G 5
Continuation of 601. Wi Qtr. 5 cl. Prereq: 601 or equiv with written permission of instructor.

603 Classical Chinese III U G 5
Continuation of 602. Sp Qtr. 5 cl. Prereq: 602 or equiv with written permission of instructor.

610 Level Four Chinese I U G 5
Integrated-skills course focusing on reading and composition which requires participation in weekly speaking and lecture comprehension. Au Qtr. 3 1/2-2 hr cl. Prereq: 508, or 510 and 511, or written permission of instructor.

611 Level Four Chinese II U G 5
Multi-media based study of authentic Chinese texts which trains students to speak, listen, read, and write about how language is used and when it is culturally appropriate. Wi Qtr. 5 cl. Prereq: 610 or written permission of instructor.

612 Level Four Chinese III U G 5
Multi-media based study of authentic Chinese literary texts which trains students to speak, listen, read, and write in the discourses of Chinese culture and cultural studies. Wi Qtr. 5 cl. Prereq: 611 or written permission of instructor.

651 History of Chinese Literature I U G 5
Chinese literature from antiquity to the end of the Han Dynasty; various aspects of the classical tradition and new developments in the age of Disunity. Wi Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.

652 History of Chinese Literature II U G 5
Chinese literature from the Sui to the present; literary trends and achievements of the Song-Tang period; rise of vernacular writings; modern literature under western impact. Sp Qtr. 2 2-hr cl. Prereq: Written permission of instructor. Taught in English. Partial texts in Chinese optional. Open to nonmajors.

674 Chinese Opera U G 5
An introduction to Chinese opera as a dramatic literature and performing art; study of selected plays and illustrated discussions of various aspects of the theatre. Sp Qtr. 5 cl.

578 Studies in Chinese-American Literature U G 5
Critical study of modern Chinese-American literature in historical and cultural context; topics vary: gender issues, genre studies, women's writing. Au Qtr. 2 2-hr cl. Prereq: 10 or in any literature or grad standing or permission of instructor. Not open to students with credit for Comp Std 678. Repeatable to a maximum of 10 or hrs. Cross-listed in Comparative Studies in the Humanities.

680 Introduction to Chinese Linguistics U G 5
Investigation of the phonology, morphology, syntax, lexicon, and writing system of the Chinese language. Wi Qtr. 2 2-hr cl. Prereq: 103 and Linguist 601, or permission of instructor.

681 History of the Chinese Language U G 5
Introduction to the Chinese language, its earlier stages, and archaic Chinese. Sp Qtr. 2 2-hr cl. Prereq: 680 or permission of instructor.

683 Study of the Chinese Writing System U G 5
A critical study of the origin, classification, composition, and development of the Chinese writing system, including problems in simplification and alphabeticization. Wi Qtr. 3 cl. Prereq: 103 or permission of instructor.

690 Chinese Translation Workshop U G 3
Investigation of problems and techniques of translating Chinese into English and English into Chinese: practice of translation of selected passages; individual assignments and group discussion. Sp Qtr. 2 cl. Prereq: 509 and 603, or equiv with written permission of instructor.

693 Individual Studies U G 1-5
Directed study to meet individual research needs of students in area studies and East Asian program. Su, Au, Wi, Sp Qtrs. Prereq: 509 or 603, and written permission of instructor. Repeatable to a maximum of 15 cr hrs. Not a substitute for regular language courses. This course is graded S/U.

694 Group Studies U G 1-5
698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.
699.01 Domestic
699.02 Foreign

751 Selected Readings in Scholarly Chinese Texts I U G 3
Academic writings in the humanities and social sciences by modern Chinese scholars in both the wen-yen and pai-hua styles.
Au Qtr. 3 cl. Prereq: 509 or permission of instructor.

752 Selected Readings in Scholarly Chinese Texts II U G 3
Continuation of 751.
Wi Qtr. 3 cl. Prereq: 751 or permission of instructor.

753 Selected Readings in Scholarly Chinese Texts III U G 3
Continuation of 752.
Sp Qtr. 3 cl. Prereq: 752 or permission of instructor.

761 Modern Chinese Poetry U G 3
Lectures and readings covering major poets since 1919.
Au Qtr. 3 cl. Prereq: 652 or permission of instructor.

762 Modern Chinese Prose U G 3
Studies of various types of prose literature of the May Fourth Movement and the Communist period.
Sp Qtr. 3 cl. Prereq: 652 or permission of instructor.

763* Modern Chinese Fiction U G 5
Readings in twentieth-century Chinese fiction.
Au Qtr. 2-2½ hr cl. Prereq: 651 or 652 or permission of instructor.

764* Modern Chinese Drama U G 3
Lectures on and readings in works by major 20th-century playwrights including Hung Shen and Ts'ao Yu.
Wi Qtr. 3 cl. Prereq: 652 or permission of instructor.

782* Chinese Phonology U G 3
Mandarin phonology and Chinese dialectology.
Sp Qtr. 3 cl. Prereq: 681 or permission of instructor.

H783 Honors Research U 3-5
A program of reading arranged for each student, with individual conferences, reports, and honors thesis.
Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of Chinese courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of B in this course is a disqualification for special honors. Open only to Chinese majors. This course is graded S/U.

784* Chinese Syntax U G 3
An investigation of the syntactic structure of Mandarin Chinese.
Sp Qtr. 3 cl. Prereq: 680 or 681 or permission of instructor.

785 Modern Chinese Dialects U G 3
Investigation of the phonology, morphology, lexicon, and syntax of the major modern Chinese dialects from a cross-dialectal, comparative approach.
Au, Wi, Sp Qtrs. 2 1½-2 hr cl. Prereq: 680 or permission of instructor.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Sp Qtr. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 or 15 hrs with permission of dept.

800 Chinese Bibliography and Research Methods G 3
An introduction to bibliographies and reference works in the Chinese humanities; general and specific problems for research.
Wi Qtr. 3 cl. Prereq: 509 and 603, or equiv with written permission of instructor.

801 Teaching Chinese at the College Level G 5
Methods and techniques of teaching college-level Chinese; selection and preparation of teaching, testing, and laboratory materials; observation of a variety of language classes.
Au Qtr. Two wk intensive workshop previous to qtr followed by a 2-½ hr cl. Prereq: Permission of instructor. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs.

804 Advanced Classical Chinese I G 3
Designed for further study of the syntax and vocabulary of classical Chinese; texts are selected from literature, history, and philosophy.
Au Qtr. 3 cl. Prereq: 603 or equiv with written permission of instructor.

805 Advanced Classical Chinese II G 3
Continuation of 804.
Wi Qtr. 3 cl. Prereq: 804.

806 Advanced Classical Chinese III G 3
Continuation of 805.
Sp Qtr. 3 cl. Prereq: 805.

871* Traditional Chinese Poetry G 5
Lectures and readings from ancient odes and songs and the later shih and t’u poetry.
Au Qtr. 2-2½ hr cl. Prereq: 651 and 652, or permission of instructor.

872* Traditional Chinese Prose G 5
Lectures on and readings in various types of non-fiction prose in Au-wen and yu-hu-y’i styles of early times.
Sp Qtr. 2-2½ hr cl. Prereq: 651 and 652, or written permission of instructor.

873* Traditional Chinese Fiction G 5
Lectures and readings in classical and vernacular fiction.
Au Qtr. 2-2½ hr cl. Prereq: 651 and 652, or permission of instructor.

874* Traditional Chinese Drama G 5
A lecture and reading course in Yuan, Ming, and Ch'ing drama.
Sp Qtr. 2-2½ hr cl. Prereq: 651 and 652, or permission of instructor.

875 Chinese Literary Criticism G 5
The historical development of critical theories, with concentration on major critics.
Sp Qtr. 2-2½ hr cl. Prereq: 3 Chinese literature courses at the 700 level or above, or equiv with written permission of instructor.

879 Seminar in Chinese Literature G 3-5
An intensive reading course in Chinese literature with a selected topic for each offering and research projects for individual students; topic to be announced.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

882* Studies in Chinese Historical Phonology G 5
Critical study of the rhyming dictionaries, the reconstruction of the phonology of old Chinese and its relations to modern Chinese dialects.
Sp Qtr. 2-2½ hr cl. Prereq: 782 or permission of instructor.

884* Studies in Chinese Historical Syntax G 3
Problems of Chinese historical syntax; grammatical structures of classical Chinese, syntactic rules found in selected texts from various ancient writings.
Sp Qtr. 3 cl. Prereq: 784 or permission of instructor.

889 Seminar in Chinese Linguistics G 3-5
Topics include the history of Chinese linguistics and related areas, specific studies in Chinese dialects, etc.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

899 Interdepartmental Seminar G 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

998 Research in Chinese: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research in Chinese: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Circulation Technology

School of Allied Medical Professions
152 School of Allied Medical Professions Building, 1583 Perry Street, 292-7261

400 The Aseptic Environment U 5
An introduction to the aseptic environment with emphasis on the student's function within this environment as a member of the medical-surgical team.
Beckley.
Au Qtr. 2 cl, 2 3-hr labs. Prereq: Permission of instructor.
415 Applied Circulation Technology—Physiological Principles U 5
The presentation of cardiac, respiratory, and renal physiology and their relationship to extracorporeal devices and technology. Tallman. Wi Qtr. 5 cl. Prereq: Permission of instructor.

420 Circulation Technology Instrumentation U 5
The application of mechanical and electronic principles to the instrumentation unique to circulation technology with emphasis on design and selection of equipment. (Chaloner.) Wi Qtr. 3 cl, 2-2-2 hr lab. Prereq: Written permission of instructor.

430 Clinical Management of the Cardiac Patient U 3
The presentation of cardiac anatomy, pathophysiology, and diagnosis and treatment of cardiac disease including the use of extracorporeal devices. Beckley. Sp Qtr. 1 3-hr cl. Prereq: Permission of instructor.

450 Cardiopulmonary Monitoring and Assessment U 5
Lectures and laboratories involving invasive and non-invasive techniques of cardiopulmonary assessment and data interpretation. Tallman. Sp Qtr. 2 2-2 hr cl, 1 3-hr lab. Prereq: 420 or permission of instructor.

460 Applied Circulation Technology—Phase I U 3
An introduction to cardiopulmonary bypass circuits, components, and ancillary devices associated with the practice of extracorporeal technology. Beckley. Wi Qtr. 1 2-2 hr cl, 1 3-hr lab. Prereq: Written permission of instructor.

470 Applied Circulation Technology—Phase II U 3
Principles and practices of cardiopulmonary bypass; focus on physiological aspects of perfusion; laboratory simulation of cardiopulmonary bypass. Holt. Sp Qtr. 2 1-1 hr cl, 1 2-2 hr lab. Prereq: 460 or written permission of instructor.

510 Applied Circulation Technology—Cardiovascular U 5
The presentation of cardiovascular physiology, pathophysiology, and treatment of cardiovascular disease including the use of extracorporeal devices. Holt. Au Qtr. 5 cl. Prereq: 460 or permission of instructor.

512 Applied Circulation Technology—In Vitro Lab U 4
The study of various extracorporeal devices and techniques in a controlled in vitro laboratory environment. Beckley. Au Qtr. 1 6-1 hr lab, 1 2-2 hr conf. Prereq: 460 or permission of instructor.

513 Applied Circulation Technology—In Vivo Lab U 4
The study of various extracorporeal devices and techniques in a controlled in vivo laboratory environment. Holt. Au Qtr. 1 6-1 hr lab, 1 2-2 hr conf. Prereq: 460 or permission of instructor.

560 Surgical Support Systems: Phase I U 5
Case studies relating circulation technology to the clinical use of extracorporeal devices and monitoring instrumentation in surgery. Beckley. Wi Qtr. Prereq: 410 and 420 or permission of instructor.

561 Surgical Support Systems—Clinical Experience: Phase I U 10

570 Surgical Support Systems: Phase II U 5
Case studies relating circulation technology to the clinical use of extracorporeal circulation devices and monitoring instrumentation in support of surgery. Beckley. Sp Qtr. 5 cl. Prereq: 560 and 561; or permission of instructor; concur: 571.

571 Surgical Support Systems—Clinical Experience: Phase II U 10

593 Individual Studies in Circulation Technology U 1-5
Clinical, laboratory, or research experiences by individual arrangement for qualified students. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

595 Seminar in Circulation Technology U 1-5
Conferences, group discussions, and presentations of selected topics. Au, Wi, Sp. Su Qtrs. 1 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 6 cr hrs.

City and Regional Planning

109 Brown Hall, 109 West 17th Avenue, 292-1012

310 Introduction to City and Regional Planning U 4
Introduction to fundamental concepts, including physical planning, transportation, housing, land use, urban development, and preservation. Au, Wi, Sp Qtrs. 4 cl.

320 Planning for Housing U 4
An introduction to the American housing system, evolution of housing programs, and selected topics in planning for housing in urban and regional contexts. 4 cl.

330 Planning and Urban Design U 4
Introduction to the use of concepts related to urban design and to the planning process. 4 cl.

597 City Planning in the Contemporary World U 5
Urban shelter and service delivery in developed/developing and capitalist/socialist regions of the world; role of income, jobs, and planning in housing. Sp Qtr. 2-2 hr cl. Prereq: Sr standing. Not open to students with credit for 425. GEC/LAR course.

607 Fundamentals of Geographic Information Systems U 4
Basic principles of geographic and land information systems and their use in spatial analysis and information management. Wi Qtr. 3 cl, 1 3-hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685, or 607 in Civil En, Geol Sci, Geog Sci, or Nil Res. Cross-listed in Civil Engineering, Geodetic Science, Geography, Geodetic Sciences, and Natural Resources.

643 American City Planning since 1900 A.D. U 4
Introduction to current American city planning processes and urban form through historic evolution of urban problems and related urban planning systems since 1900. Sp Qtr. 2 cl, 1 lab hr. Complements 642. Not open to students with credit for 300 or 743 or 811.

694 Group Studies U 1-5
Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution U 1-15
An opportunity for Ohio State students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

702 Urban Planning Graphics U 2
Rudiments of graphic techniques employed most frequently in practice: basic drafting, printing processes, report preparation, and related subjects. Wi Qtr. 1 cl, 2 lab hrs. Prereq: Grad standing & 6 cr plan or permission of instructor.

710* Introduction to Urban and Regional Planning for Open Space, Recreation, and Conservation U 3
Review of leisure and recreational activities with associated design criteria, definition of the need for open space, and exploration of workable programs for its preservation and development. Sp Qtr. 2 cl.

712 Theory of City and Regional Planning U 4
Planning processes; the general plan; formulation of goals; land development policies and decisions; alternative urban and regional forms; role and scope of planning. Au Qtr. 4 cl. Not open to students with credit for 812.

720 Introduction to Analysis of Energy Factors in City and Regional Planning U 3
Covers the resource, technological, environmental, economic, and institutional dimensions related to coal, natural gas, electricity, solar, geothermics, environmental impacts, and energy conservation in cities. Wi Qtr. 2 cl.

721 Seminar on Mathematical Models of Energy Management and Planning U 3
Mathematical models in coal, electricity, energy storage and curtailment, solar energy, energy/environment interactions, and comprehensive urban and regional energy planning. Au Qtr. 2 cl. Prereq: 770.
722 Introduction to Analysis and Us of Environmental Factors in City and Regional Planning  U  G  3
Introduction to application and utilization of environmental considerations in the formulation of land use policy and development plans.
Au Qtr. 2 cl. Prereq: 745 or permission of instructor.

731 Outlines of Urban Design  U  G  3
Urban design as an area of specialization in urban planning; theories and processes in urban design; evaluation of criteria.
Sp Qtr. 3 cl.

732 Urban Planning and Urban Form: Psychological Functions  U  G  3
Urban planning for the organization and character of the physical environment as significant variables in psychological processes basic to effective individual functioning; emphasis on implications for urban design.
Wi Qtr. 3 cl.

733 Urban Planning and Urban Form: Social Functions  U  G  4
Urban planning for the organization and character of the physical environment as significant variables in social processes basic to effective individual functioning; emphasis on implications for urban design.
Wi Qtr. 2-2 hr. cl.

734 Research and Analytic Methods for Urban Designers  U  G  3
Use of research and analytic methods in assisting the urban designer in problem formulation, search, prediction, evaluation, and choice.
Sp Qtr. 2 cl.

735 Programming Environments for Human Use  U  G  3
Introduction to user oriented environment programming for planners and designers; application of several methods for specifying the characteristics required of an environmental setting to support user behavior.
Sp Qtr.

740 Introduction to Planning in Developing Countries  G  5
Survey of development issues and their planning response related to population growth and distribution, income and poverty, urbanization and migration, and housing and infrastructure.
Au Qtr. 2-2 hr. cl. Prereq: 740 or equiv.

745 Physical Element of Urban Development  U  G  5
Physical components of urban areas: residential, commercial, industrial, pedestrian, and vehicular circulation; other community facilities; analysis of design criteria and standards.
Au Qtr. 3 cl. 3 lab hrs. Not open to students with credit for 845.

746 Managing the Urban Spatial Environment: Regulatory Techniques  U  G  3
Physical planning, environmental and urban design policy design and implementation in central city and suburban settings; emphasis on innovative regulatory approaches.
Wi Qtr. 2 cl.

749 Studio in Planning for Developing Countries  G  5
A studio with group projects on planning issues in developing countries.
Sp Qtr. 4 cl. Prereq: 741.

750 Resolving Social Conflict  G  4
A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical contexts.
Au Qtr. 1-3 hr. cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and Natural Resources.

752 Urban Planning for Housing  U  G  3
Introduction to urban planning issues related to housing with regard to urban structure, markets, reform, suburbanization, new towns, urban renewal, and rehabilitation.
Au Qtr. 3 cl.

753 Outlines of Regional Planning  U  G  3
State, national, and regional planning; components of regional development; regional analysis and design.
Au Qtr. 3 cl. Not open to students with credit for 813.

755 State Planning of Regional Growth and Development  G  3
Rationale for state intervention in regional economics, growth centers and neoclassical models, development planning in foreign countries; comparison and evaluation of models and evidence.
Wi Qtr. 3 cl. Prereq: 753 or equiv with written permission of instructor. Not open to students with credit for 820.

761 Land-Use Controls  U  G  4
Legal basis of land-use controls in the United States, provisions, procedures and issues in zoning, subdivision regulation, urban renewal, building and housing codes, and acquisition of real property for public use.
Wi Qtr. 3 cl. Not open to students with credit for 861.

762 Urban Planning Data and Forecasting  U  G  5
Sources of information, data handling, forecasting, and basic studies in urban planning.
Sp Qtr. 3 cl. 6 lab hrs. Prereq: 770 or permission of instructor. Not open to students with credit for 832.

763 Consequence Analysis in Urban Planning  U  G  4
Urban planning studies using cost-benefit, cost-effectiveness, systems analysis, and PPBS approaches.
Au Qtr. 2 cl. 2 lab hrs. Prereq: 770 or permission of instructor.

764 City Planning Administration  U  G  4
Administration of official urban planning agencies; zoning administration; subdivision review practices; capital improvement programming; budget and work program preparation.
Au Qtr. 4 cl. Not open to students with credit for 862.

765 Social Policy Law  U  G  4
Studies of law and social policy; topics vary.
Sp Qtr. 4 cl. Not open to students with credit for 865.

766 Environmental Planning Law  U  G  4
The interaction between law and environmental planning and protection.
Au Qtr. 4 cl. Prereq: 761 or equiv with written permission of instructor. Not open to students with credit for 866.

770 Introduction to Quantitative Methods in Urban Planning  U  G  4
Introduction to mathematical models in urban planning; descriptive statistics, probability, decision theory, and use of digital computer.
Au Qtr. 4 cl. Prereq: Permission of instructor.

771 Applications of Quantitative Methods in Urban Planning  U  G  4
Applications of statistical analysis in urban planning; hypothesis testing and parameter examination methods; computer analysis of urban planning data.
Wi Qtr. 4 cl. Prereq: 770.

775 Transportation Planning  U  G  4
Discussion and examples of urban transportation planning processes, emphasizing quick-response models of locational and travel behavior, development and evaluation of alternatives, policies, and citizen reaction and participation.
Au Qtr. 3 cl. 13 hr. lab. Prereq: Civil En 670 or equiv with written permission of instructor or grad standing in c or s plan. Not open to students with credit for Civil En 775. Cross-listed in Civil Engineering.

776 Topics in Urban Transportation and Planning  U  G  3
Survey of major topics in urban transportation planning, emphasizing policy concerns and analytical tools necessary to address these concerns.
Wi Qtr. 1 2-3 cl. Prereq: 770 or equiv; 761 or equiv. or permission of instructor.

777 Transportation Regulation  U  G  3
Current U.S. transport regulation and tools used to evaluate its desirability.
Sp Qtr. 1 2-3 cl. Prereq: 770 or equiv; 761 or equiv. or permission of instructor.

780 Workshop in Urban and Regional Planning Techniques  U  G  3-5
Techniques in the urban and regional planning process: spatial distribution and management of population and economic growth in the city and the region, stressing the applied aspects of the techniques as used in the profession.
Sp Qtr. Prereq: 770 or permission of instructor.

781 Spatial Models in Urban Planning  U  G  4
Urban planning applications of theories of spatial equilibrium and rent theory; impacts on spatial distribution of zoning, property taxation, and infrastructural investment.
Sp Qtr. 4 cl. Not open to students with credit for 880.
793 Individual Studies in Urban Planning U G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

794 Group Studies in Urban Planning U G 1-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs.

015 Case Studies in Urban Planning for Housing G 4
Review of empirical studies in urban planning for housing including aspects of density, spatial production, housing services, and price formation. Wi Qtr. 2 cl, 2 lab hrs. Prereq: 752 or permission of instructor.

816 Seminar in Urban Planning for Housing G 3
Presentation and discussion of research related to urban planning for housing, including theoretical studies, modeling, simulation, and statistical testing. Sp Qtr. 3 cl. Prereq: 752 or permission of instructor.

821 Regional Planning Studio G 5
Application of economic and environmental analysis to regional development projects. Sp Qtr. 2 cl, 3 lab hrs. Prereq: 723. Repeatable to a maximum of 10 cr hrs.

834 Decision Analysis in Urban Planning G 3
Application of decision theory and analysis to case studies in urban planning. Sp Qtr. 3 cl. Prereq: 770.

835* Land Use, Environmental Quality, and Regional Analysis G 4
Introduction of land use and environmental models as tools in the planning process and as techniques for improving the quality of physical development plans. Sp Qtr. Prereq: 770 or equiv or permission of instructor.

851 Urban Precinct Planning G 5
Preparation of detailed physical development plans for a small section of a city. Au Qtr. 3 cl, 6 lab hrs. Prereq: 745 or 762 or permission of Instructor.

852 Urban Project and Policy Planning G 5
Identification of options among planning policies and projects; development of analyses to aid in making choices among policies in urban development. Wi, Sp Qtrs. 2 cl, 9 lab hrs. Prereq: 745 or 762.

853 The Urban General Plan G 5
Current practice in preparation of the urban general plan; laboratory exercise in the preparation of a general plan for an urban community. Wi, Qtr. 3 cl, 6 lab hrs. Prereq: 745, 762, and 781; or permission of instructor.

864 Urban Planning Theory Seminar
Review of contemporary urban planning programs; analyses of objectives and strategies. 864.01 Urban Planning Theory Seminar: History of Planning G 5
Examination of how planning thought evolved in relation to different stages of our civilization. Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

864.02* The Political Process of Planning G 5
Examination of the relationship of planning to the political process and governmental activity. Wi Qtr. 2 2-hr cl. Prereq: 864.01 or permission of instructor.

864.03* Planning in Market Oriented Systems G 5
The role of planning within a system whose primary orientation is to allocate goods and services via markets. Sp Qtr. 2 2-hr cl. Prereq: 864.01 or permission of instructor.

867* Land Use Policy G 4
Law and administration in land use planning programs. Sp Qtr. Prereq: 761 or permission of instructor.

870* Research on Quantitative Methods in Urban Planning G 5
Workshop application of quantitative planning methods to an urban or regional planning problem. Au, Wi, Sp Qtrs. 1 cl, 3 lab hrs. Prereq: 770 or permission of instructor. Repeatable to a maximum of 9 cr hrs. Not open to students with cr for 870.

870.01 Static Optimization in Planning G 5
The use of mathematical programming techniques to solve planning problems. Au Qtr. 2 2-hr cl, arr. Prereq: Permission of instructor and Math 568 or equiv.

870.02 Dynamic Optimization in Planning G 5
Provides advanced graduate students with a sound foundation on a set of quantitative planning techniques in a dynamic context. Wi Qtr. 2 2-hr cl. Prereq: 870.01 and Math 255 or equiv.

870.03 Forecasting and Simulation in Planning G 5
Overview of advanced methods in forecasting and simulation and application to urban and regional planning. Sp Qtr. 2 2-hr cr. Prereq: 762 and 771, or permission of instructor.

871 Research Seminar in Environmental Planning G 5
Overview of advanced methods in forecasting and simulation and application to urban and regional planning. Sp Qtr. 2 2-hr cr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

871.01 Research Seminar in Environmental Planning G 5
Processes and concepts for the design planning and management of the natural and built environment. Not open to students with credit for 871.

871.02 Research Seminar in Development Planning G 5
Research problems associated with urban and regional development, including economic development, planning in developing countries, and related issues; topics vary. Not open to students with credit for 872.

871.03 Research Seminar in Regional Science G 5
Development of theoretical and methodological issues in regional science as they pertain to urban and regional planning. Not open to students with credit for 873.

871.04 Research Seminar in Planning Processes G 5
Institutional factors which affect the field of planning; topics vary. Not open to students with credit for 874.

871.05 Research Seminar in Mathematical Planning G 5
Developmental topics in mathematical planning, and its applications to selected planning problems. Not open to students with credit for 875.

871.06 Research Seminar in Energy Planning G 5
Developmental topics in energy planning and its application to selected energy problems. Not open to students with credit for 876.

871.07 Research Seminar in Transportation Planning G 5
Survey of current literature, structured around a general theme which varies. Not open to students with credit for 877.

871.08 Research Seminar in Public Services Planning G 5
In-depth review of selected recent literature in the field; focus varies. Not open to students with credit for 878.

871.09 Research Seminar in Environment-Behavior/Urban Design G 5
Research on empirical aesthetics; seminal works, theories, and empirical findings. Su, Au, Wi, Sp Qtrs. 4-hr cl. Not open to students with credit for 301 and 302.

879 Seminar in Planning Research G 1-5
Topics to be announced each quarter. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

881* Foundations of Spatial Modelling in Planning G 5
Analysis of behavioral foundations of spatial models. Sp Qtr. 2 2-hr cr. Prereq: 781 recommended.

893 Individual Studies G 1-5
Individual studies for Ph.D. students in city and regional planning. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

990 Urban Planning Practicum G 1-6
Supervised field experience in urban planning; analysis and critique of field experience. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in 8cr plan. Repeatable to a maximum of 5 cr hrs.

998 Research in City and Regional Planning Master's Thesis G Arr
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

999 Research in City and Regional Planning PhD Dissertation G Arr
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. Prereq: PhD standing. Repeatable. This course is graded S/U.
Civil Engineering

470 Hitchcock Hall, 2070 Neil Avenue, 282-2771

402 Surveying and Measurements in Civil Engineering U 4
Introduction to surveying and measurement theories for civil engineering practice.
Au, Sp Qtr. 3 cl, 1-3 hr lab. Prereq or conc: 405; minimum CPHR of 2.00, and civil en major or written permission of dept chairman.

405 Observational Analysis U 5
Theory and application of observational analysis.
Au, Sp Qtr. 5 cl. Prereq: Chem 121, En Graph 142 or 187, Eng Mech 210 or 220, Math 254, Physics 153, a second writing course, a minimum CPHR of 2.00, civil en major; or written permission of dept chairman, GEC course.

406 Fundamentals of Civil Engineering Analysis U 5
Application of numerical methods to problems in civil engineering.
Wi Qtr. 5 cl. Prereq: 405; minimum CPHR of 2.00; civil en major or written permission of dept chairman. GEC course.

410 Environmental Pollution and Control U 3
Environmental pollution: the causes and control of air, water, and land pollution in relation to their effects on health, aesthetics, economics, and ecology.
Au Qtr. 3 cl. Prereq: Chem 101 or equiv with written permission of instructor. Not open to engineering majors or students with credit for 714.

413 Fluid Mechanics U 4
Fluid properties; fluid statics; flow concepts; continuity, energy, and momentum equations; dimensional analysis and dynamic similarity; viscous effects; drag; basic pipe flow; lab demonstrations and experiments.
Au Qtr. 3 cl, 1-2 hr lab. Prereq: Eng Mech 410 or 430, prereq or conc: Civil En 405 or standing as Agr Eng major; minimum CPHR of 2.00; or written permission of dept chairman.

431 Structural Engineering Principles U 3
Structural forms, analysis of statically determinate structures, approximate analysis of indeterminate structures, and moving loads.
Au, Wi Qtrns. 3 cl. Prereq: Eng Mech 420 or 440; prereq or conc: Civil En 405, minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairman.

451 Civil Engineering Materials U 4
Composition and structure of civil engineering materials; elastic, plastic, and viscous behavior under various environmental and loading conditions.
Au, Sp Qtrns. 3 cl, 1-3 hr lab. Prereq or conc: 405, Eng Mech 420 or 440; minimum CPHR of 2.00, and standing as a civil en major or written permission of dept chairman.

460 Professional Aspects of Civil Engineering U 2
Structure of the civil engineering profession; interaction of civil engineers with the education process, their clients, other professions and the public.
Wi, Sp Qtrns. 2 cl. Prereq: 406 and civil en sr standing. Must be taken as close to graduation as possible. GEC course. This course is graded S/U.

489 Professional Practice U 2
Actual employment in a co-op program job and the preparation of a comprehensive report based on a pre-arranged outline and a pre-assigned topic.
Su, Au, Wi, Sp Qtrns. Prereq: Admission to co-op program in civil en. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

510 Principles of Hydraulics U G 3
Fluid properties; hydrostatics, flow concepts; continuity, energy, and momentum equations and applications; flow measurements, pipe and channel flow.
Sp Qtr. 3 cl. Prereq: Math 151 and Physics 111 or 131. Not open to students with credit for 413. Majority of course will be conducted using self-paced programmed instruction manual.

516 Water Resources Engineering U G 4
Pipe systems, introduction to open channel flow, basic hydrology, demographic studies, water supply, and wastewater flows.
Wi Qtr. 4 cl. Prereq: 413 and En Graph 200 or En Graph 167 and civil en major.

519 Applied Hydraulics U G 3
Experimental and design laboratory for water supply collection, transmission, distribution and measurement systems; sewage and storm water collection, and disposal and measurement systems.
Sp Qtr. 2 cl, 1-3 hr lab. Prereq: 516.

520 Design of Treatment Facilities U G 4
Selection and design of processes for the purification of natural and used waters.
Sp Qtr. 4 cl. Prereq: 413 and Chem 123 or 125.

531 Structural Analysis U G 4
Deflections in trusses, beams, and frames; solution of indeterminate structures by methods of consistent deformations, and moment distribution.
Au Qtr. 4 cl. Prereq: 431.

532 Structural Steel Design U G 4
Design of steel beams, columns, tensile members, beams-columns, connections, and plate-girders. Adell.
Au Qtr. 4 cl. Prereq: 431.

534 Behavior of Structural Elements U G 4
Mechanics of beams, columns, unsymmetrical bending, columns, plastic bending, limit loads, properties of structural metals, and proportioning beams for flexure.
Sp Qtr. 4 cl. Prereq: 431.

535 Basic Reinforced Concrete Design U G 5
Analysis and proportioning of reinforced concrete members.
Wi, Sp Qtr. 5 cl. Prereq: 431.

540 Civil Engineering Systems U G 4
Basic concepts and methods of systems engineering and applications to civil engineering problems in transportation and water resources planning, structural design, and construction management.
Au Qtr. 4 cl. Prereq: 405.

552 Construction Materials U G 4
Composition, properties, and production of portland cement concrete, bituminous materials, and bituminous mixtures.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 451.

554 Geotechnical Engineering U G 4
Properties of natural soil deposits and subsurface exploration; engineering solutions to problems of slope stability, foundation settlement, and earth pressure.
Sp Qtr. 4 cl. Prereq: Eng Mech 420 or 440; prereq or conc: Civil En 405; or standing as agricultural engineering major, or written permission of dept chairman.

570 Transportation Engineering and Analysis U G 4
Introduction to topics in transportation engineering and analysis; geometric design, traffic flow, freeway capacity, traffic signals, demand-performance equilibrium, pricing, and design under uncertainty.
Wi Qtr. 4 cl. Prereq: Eng Mech 410 or 430; prereq or conc: Civil En 405, minimum CPHR of 2.00, and standing as civil en major, or written permission of dept chairman.

576 Civil Engineering Economics and Planning U G 4
Engineering economics and theories of planning applied to private and public civil works.
Wi Qtr. 4 cl. Prereq or coreq: 406.

590 Special Topics in Civil Engineering U 2
Studies in analysis, design, test, fabrication, and construction.
Su, Au, Wi, Sp Qtrns. Arr. Prereq: Jr standing in engineering or written permission of instructor. Repeatable to a maximum of 9 or hrs.

590.01 Steel Bridge Building Development

590.02 Timber Bridge Building Development

590.03 Concrete Canoe Development

590.04 Environmental Engineering Process Development

593 Remote Sensing of Environment U G 4
The energies of the natural and cultural environment; current remote sensing systems and case histories of applications in measuring the environment.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Geod Sci 603. Cross-listed in Geodetic Science.

604 Terrain Analysis U G 4
Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies and land use suitability and capability mapping.
Au Qtr. 3 cl, 1-3 hr lab. Prereq: 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Geod Sci 604. Cross-listed in Geodetic Science.

606 Quantitative Remote Sensing U G 4
An introduction to computer processing of digital image data from Landsat satellites; emphasis on concepts, techniques, and statistics important to numerical analysis.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: 405 or equiv, 603 or 604 or 805, and En Graph 200 or 167 or equiv.
607 Fundamentals of Geographic Information Systems U G 4
Basic principles of geographic and land information systems and their use in spatial analysis and information management.
Wt Qtr. 3 cr, 1-3 hr lab. Prereq: Sr standing. Not open to students with credit for Geog 685; or 607 in C&SE Plan, Geog Sc, Geol Sc, or Nat Res. Cross-listed in City and Regional Planning, Geodetic Science, Geography, Geophysical Science, and Natural Resources.

610 Analysis of Natural and Polluted Waters U G 3
A laboratory study of the measurement and interpretation of water quality indices and pollution parameters including BOD, COD, alkalinity, nutrients, pH, and heavy metals.
Au Qtr. 2 cr, 1-3 hr lab. Prereq: Chem 125 or 205 and Math 152 or equiv.

613 Applied Hydrology U G 4
Hydrologic cycle, meteorology, streamflow, evapotranspiration, hydrographs, runoff relations, runoff hydrographs, groundwater, unit hydrographs, flood routing, frequency and duration studies, and application of hydrologic techniques.
Au Qtr. 4 cr. Prereq: 510 or 516.

618 Environmental Pollution U G 4
Problems, principles, causes and control of pollution in the local, regional and global environment. Qualitative approaches to environmental problems in air, water, and land systems.
Wt Qtr. 4 cr. Prereq: Sr level standing & 15 hrs Natural science. Not open to students with credit for Natural Resources 618, Zoology 618 or Mech Eng 618. Cross-listed in Natural Resources.

620 Treatment Plant Design Laboratory U G 2
A laboratory demonstration of the treatment processes discussed in 520 and an introduction to pilot-testing procedures for environmental engineering majors.
Wt Qtr. 1 cr, 3-4 hr lab. Prereq: 610; or prereq or concur: 520.

624 Coastal and Ocean Engineering U G 4
Linear and nonlinear waves, water level and wave forecasting spectra, forces on fixed structures; beach processes, littoral drift, and transport; shoreline protection.
Wt Qtr. 4 cr. Prereq: 516.

651 Soil Mechanics U G 4
Stress-strain properties and shear strength of soils; settlement and stability analyses. Wu.
Au Qtr. 3 cr, 1-3 hr lab. Prereq: 554.

653 Principles of Rock Mechanics U G 4
Engineering properties of rock and their measurement; in-situ stresses; analysis of rock slopes, tunnels, underground openings, and foundations.
Sp Qtr. 3 cr, 1-1 hr lab, 1-1 day field trip. Prereq: 554. Not open to students with credit for Min Eng 653.

662 Introduction to Mechanics of Composite Structures U G 4
An introduction to the macromechanical analysis of anisotropic composite structures including governing constituent equations, strength and stiffness advantages, and failure envelopes.
Au Qtr. 4 cr. Prereq: Eng Mech 440 or equiv, or permission of instructor. Not open to students with credit for Eng Mech 662 or Mech Eng 662. Cross-listed with Engineering Mechanics and Mechanical Engineering.

570 Urban Public Transportation U G 4
Planning, analysis, and operation of urban public transportation systems; description and analysis of novel systems.
Sp Qtr. 4 cr. Prereq: 570 or equiv with written permission of instructor.

672 Traffic Engineering Studies U G 3
Methods of collecting and analyzing traffic flow data, parking, driver and pedestrian behavior; reduction and evaluation of traffic data for applications in traffic engineering.
Au Qtr. 2 cr, 1-2 hr lab. Prereq: 570 or equiv with written permission of instructor.

673 Highway Location and Design U G 4
Methods of highway route location; design standards for highways, intersections, freeways, and interchanges; discussion of computer programs for highway design.
Wt Qtr. 4 cr. Prereq: 570 or equiv with written permission of instructor.

6741 Airport Design and Operation U G 4
Airport configuration, design, and capacity; development of the terminal area; operational aspect of air traffic and the terminal area; design and operation of heliports.
Sp Qtrs. 3 cr, 1-2 hr lab. Prereq: 570 or equiv with written permission of instructor.

6811 Construction Methods, Equipment and Performance U G 3
Procedures, testing, and quality control in concrete operations; analysis of formwork and false work performance; advanced methods in the construction of hi-rise buildings, bridges, and other structures.
Au Qtr. 2 cr, 1-3 hr lab and field trip. Prereq: 454.

682 Faults, Failures, and Forensics in Construction U G 4
Design and construction operations; mechanisms of failures and accidents; methods of avoidance; and forensic engineering.
Au Qtr. 2:2-hr cr, 1:3-hr lab and field trips. Prereq: 431.

684 Construction Network Analysis U G 4
Planning, scheduling, and supervision of engineering construction projects; use of Critical Path Method; bar charts, and other techniques.
Wt Qtr. 2 cr, 2:2-hr lab. Prereq: 540.

685 Deterministic Construction Estimating and Pricing U G 4
Generally accepted models and methods of estimating and pricing; identification of causes of underestimating and overpricing.
Au Qtr. 2:2-hr cr. Prereq: 576.

686 Construction Contracts and Claims U G 4
Contract documents and specifications; formulation of contracts; offer, acceptance, breach, and damages; responsibilities and liabilities; claims; labor agreements.
Sp Qtr. 2:2-hr cr. Prereq or concur: 576 or equiv with written permission of instructor.

687+ Construction Project Administration U G 4
Duties of professional construction managers in project administration; CM practices and methods; practical forms for project and office use.
Sp Qtr. 2:2-hr cr. Prereq: 576.

692 Individual Studies U G 1-5
Individual conferences, assigned readings, and reports on minor investigations.
Su, Au, Wt, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU. Limitations on number of cr hrs applicable toward degrees are governed by departmental rules.

694 Group Studies in Civil Engineering U G 1-5
The student must register for particular topics from fields of civil engineering listed below; the topics, cr hrs, and instructors will be announced in quarter previous to the quarter offered.
Su, Au, Wt, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs, not more than 10 of which shall be in any one of the following fields.
A— Structural Engineering
B— Geotechnical Engineering
C— Sanitary Engineering
D— Highway and Transportation Engineering
E— Remote Sensing and Environmental Surveys
F— Construction
G— Materials
I— Hydraulics and Hydrology

711 Biological Processes for Used Water Treatment U G 5
Principles and design of biological processes for used water treatment.
Wt Qtr. 5 cr. Prereq: 520 or equiv. Not open to students with credit for 811.

713 Water Quality and Environmental Measurements U G 4
The application of advanced physical and chemical measurement and calculation techniques to environmental engineering problems.
Wt Qtr. 4 cr. Prereq: 610 or permission of instructor.

714 Hazardous Waste Management U G 3
Environmental regulations; site remediation process; remedial alternatives; implementation; case studies.
Wt Qtr. 3 cr. Prereq: 520.

Regional and municipal water supply design and management; water use, law, demand, pricing, supply alternatives, and allocation; and optimal system and component design.
Sp Qtrs. 5 cr. Prereq: 516 and 540.

717 Municipal and Industrial Solid Waste Management U G 5
Characterization and sources of solid wastes; solid waste management; collection systems; processing; disposal; and recycling.
Sp Qtrs. 5 cr. Prereq or concur: 520.
718 Strategies for Industrial Environmental Management U G 3
Industrial environmental management systems, audits, accounting, reports; industrial ecology; design for environment; ISO 9000, 14000, global competition; entrepreneurship; case studies.
Au Qtr 1 3-hr cl Prereq or concwr: 540 or equiv with permission of instructor.

719 Water Quality Modeling U G 4
Stream and effluent standards for beneficial uses, and computer modeling of pollutant impacts on rivers, sykes.
Au Qtr 4 cl Prereq: 520 or equiv with written permission of instructor.

720 Environmental Engineering Risk Assessment U G 3
Basic methodologies for quantitative risk assessment and applications to a variety of contaminants, pathways, and engineering problem areas.
Wt Qtr 3 cl Prereq: 540.

721 Design of Hydraulic Structures U G 4
Basic engineering economic studies; water laws, design concepts, reservoir engineering, river training, spillways, and dissipators; hydromachinery.
Sp Qtr 4 cl Prereq: 516.

722 Open Channel Hydraulics U G 4
Flow classifications, channel properties, energy and momentum principles, critical flow, uniform flow formulas, erodible and nonerodible channel design, and gradually varied flow profile computations.
Sp Qtr 4 cl Prereq: 516.

723 Transport Phenomena in Water Resources Engineering U G 4
Water environment momentum mass energy transport, laminar and turbulent mixing; applications include river and lake pollutant dispersal, heated effluent plumes, eutrophication processes.
Au Qtr 4 cl Prereq: 516 and Math 255 or 415, or equiv. Not open to students with credit for 614.

731 Intermediate Reinforced Concrete Design U G 4
Analysis and design of reinforced concrete systems.
Sp Qtr 4 cl Prereq: 535.

734 Structural Analysis and Design for Dynamic Disturbances U G 5
Structural dynamics; principles and practice of dynamic design; numerical and graphical methods.
Au Qtr 5 cl Prereq: or concwr: 532, Eng Mech 410, and grad standing, or sr standing with permission of instructor. Not open to students with credit for 834.

735 Matrix Structural Analysis U G 4
Analysis of skeletal structures by force and displacement methods using matrices.
Wt Qtr 4 cl Prereq: 531 or equiv with written permission of instructor.

736 Bridge Engineering U G 4
Principles and methods used in design and construction of bridge structures.
Sp Qtr 4 cl Prereq: 531, 532, and 535; or equiv.

737 Prestressed and Precast Concrete Structures U G 4
Structural analysis and proportioning of prestressed concrete members and precast structural concrete systems.
Wt Qtr 4 cl Prereq: 531 and 535.

738 Intermediate Structural Steel Design U G 5
Structural behavior in the inelastic range; plastic analysis and design of framed structures; load and resistance factor design of steel structures.
Wt Qtr 5 cl Prereq: 531 and 532. Adeii.

739 Knowledge-Based Systems in Engineering U G 3
Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and optimization. Adeii.
Sp Qtr 2 1-10-hr cl Prereq: Coptrinf 630 or permission of instructor. Cross-listed in Computer and Informational Science; Chemical, Mechanical, and Nuclear Engineering.

750 Seepage in Permeable Materials U G 4
Analysis of seepage; saturated and partially saturated flow; free surface analysis; introduction to numerical techniques.
Au Qtr 4 cl Prereq: 406 and 554.

751 Principles of Foundation Analysis and Design U G 4
Subsurface exploration; shallow foundations; piles and caissons; and embankments and excavations.
Wt Qtr 4 cl Prereq: 661.

7531* Pavement Design and Materials U G 4
Properties of paving mixtures, cementing binders and mixtures, and principles of pavement design and performance evaluation.
Sp Qtr 3 cl, 1 3-hr lab. Prereq: 552.

7541 Mechanical Properties of Engineering Materials U G 4
Elasticity, plasticity, viscoelasticity, fatigue, and fracture phenomena for civil engineering materials.
Au Qtr 4 cl. Prereq: 451.

760 Civil and Environmental Engineering Planning U G 5
Water resource planning processes, benefit-cost analysis; environmental, economic, and social impacts of civil engineering projects; project selection; and case studies in water resources, transportation, and energy.
Sp Qtr 5 cl Prereq: 516.

762 Structural Composites U G 3
An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites.
Wi Qtr 3 cl Prereq: 662 or Eng Mech 662 or Mech Eng 662 or permission of instructor. Not open to students with credit for Mech Eng 762 or Eng Mech 762. Cross-listed in Engineering Mechanics and Mechanical Engineering.

763 Introduction to the Finite Element Method U G 4
Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.
Au, W, Qtr. 4 cl. Prereq: 406 or Math 568 or equiv, and En Graph 187 or equiv. Not open to students with credit for Eng Mech 763. Cross-listed in Engineering Mechanics.

771 Radiocative Waste Management U G 3
Overview of radioactive waste management. Covers waste categories, sources, treatment and disposal methods, minimization, transportation and current research topics.
Au Qtr 3 cl Prereq: Nucl En 505 or Nucl En 606 or permission of instructor. Cross-listed in Nuclear Engineering.

7741 Design and Operation of Road Traffic Facilities U G 5
Traffic laws and ordinances; operational design of streets, intersections, and terminal facilities; design and operation of traffic control devices.
Wt Qtr 4 cl, 1 3-hr lab. Prereq: 572.

775 Urban Transportation Planning U G 4
Discussion and examples of urban transportation planning processes, emphasizing quick-response models of locational and travel behavior, development and evaluation of alternatives, policies, and citizen reaction and participation.
Au Qtr 3 cl, 1 3-hr lab. Prereq: 576 and 670 or equiv with written permission of instructor or grad standing in csr. Plan. Not open to students with credit for C&SR Plan 751 or 775. Cross-listed in City and Regional Planning.

776 Network Algorithms in Transportation Systems U G 5
Optimization algorithms for transportation problems that can be formulated as networks. Special attention to computer implementation in C++.
Scl Prereq: 405, 540, and En Graph 167 or Coptrinf 201 or Copitrinf 221 or equiv. Students should have familiarity with a programming language such as FORTRAN, BASIC, Pascal or C. The laboratory component of this course will use the C++ language.

781 Construction Risk and Decision Analyses U G 5
Probability and regression models, decision model; reliability analysis; linguistic probability.
Wt Qtr 2 cl, 1 3-hr lab. Prereq: 405 and 682.

783 Honors Research U 1-5
Supervised research and project work arranged individually for honors students.
Su, Au, W, Sp Qtrs. Arr. Prereq: Honors standing; permission of instructor. Repeatable to a maximum of 12 cr hrs. Limitations on number of credit hours applicable toward degree are governed by departmental rules. This course is graded SU.

788 Computer-Aided Construction Automation and Simulation II U G 5
Design and automate construction processes using computers simulations.
Sp Qtr 2 2-hr cl, 1 3-hr lab. Prereq: 781.

795 Seminar in Civil Engineering U G 1
Lectures and discussions of current topics related to civil engineering presented by faculty, students, and guest speakers; term paper required.
Au, Sp Qtr 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr hrs. This course is graded SU.
A— Structural Engineering
B— Geotechnical Engineering
C— Environmental Engineering
D— Highway and Transportation Engineering
E— Remote Sensing and Environmental Surveys
F— Construction
G— Materials
I— Hydraulics and Hydrology

796 Interdepartmental Seminar Urban Transportation U G 1-5
Lectures and discussions by faculty and guest speakers on topics related to urban transportation problems, issues, and new approaches to solutions; term paper required.
Au, Sp Qtr. Prereq: Sr standing or permission of instructor. Repeatable to a maximum of 6 cr. Hrs. Given cooperatively by Civil Engineering and Industrial and System Engineering.

797 Interdepartmental Seminars U G 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.
Sp Qtr. Repeatable by permission.

798 Current Topics in Environmental Science and Engineering U G 1
Seminar course which presents current research findings on environmental and pollution control.
Au, Sp Qtr. 1 cr. Prereq: Grad standing in engineering, science, nat res, or agr, or permission of instructor. Not available for simultaneous credit as Nat Res 798. Repeatable to a maximum of 5 cr. Hrs. Cross-listed in Natural Resources.

804† Water Resources Engineering Applications of Remote Sensing G 5
Principles and techniques of remote sensing for acquisition of data in water resources engineering projects and water quality investigations.
Sp Qtr. 3 cr. 2-3 hr. labs. Prereq: 719 or 820.

806 Radiometric Measurements and Modeling G 5
Theory and models used in remote sensor measurements of spectral radiation.
Wi Qtr. 6 cl. Prereq: 603 or Geol Sci 603, and 604 or Geol Sci 604.

806* Integrating Remote Sensing with Engineering Databases G 5
Techniques and approaches for integrating digital data sources with engineering spatial databases.
Sp Qtr. 5 cl. Prereq: Civil Environ Geol Sci 603 or 606 or written permission of instructor.

810* Physical Chemical Treatment Processes I G 4
Principles and design of physical and chemical processes for water and wastewater treatment including mixing, disinfection, nutrient removal, and oxidation-reduction. Stiefel.
Au Qtr. 4 cl. Prereq: 520; prereq or concur: 610.

812† Physical Chemical Treatment Processes II G 4
Principles of physical/chemical treatment processes for water and wastewater, including coagulation, softening, adsorption, filtration, and membrane processes.
Sp Qtr. 4 cl. Prereq: 610.

813 Hazardous Waste Site Remediation G 4
Principles and design of hazardous waste site remediation technologies; removal and transformation processes; cost analysis.
Sp Qtr. Prereq: 610.

814* Industrial Wastewater Treatment G 3
Principles of industrial wastewater treatment including wastewater surveys; flow reduction, and segregation and equalization; batch and continuous treatment; instrumentation; and treatment processes.
Au Qtr. 3 cl. Prereq: 811, prerequisite or concur: 812.

815† Advanced Water Resource Systems: Water Quantity G 5
Advanced topics in the design and management of surface and groundwater systems; use of mathematical programming, simulation, and economic theory; written and oral presentations.
Sp Qtr. 5 cl. Prereq: 715.

816 Environmental Systems Analysis G 5
Optimization models for water quality and air quality control, solid waste and hazardous waste management, and environmental and energy facility siting.
Sp Qtr. 5 cl. Prereq: 540 or Ind Eng 842 or equiv. Not open to students with credit for 720.

817 Applied Mathematical Ecology G 5
Application of the methods of mathematical ecology to problems of environmental engineering.
Wi Qtr. 5 cl. Prereq: Permission of instructor. Not open to students with credit for 885. Cross-listed in Natural Resources.

818 Application of Biotechnology to Environmental Engineering G 5
Application of molecular and microbiological techniques for pathogens and monitoring of hazardous substances; manipulation of microorganisms for remediation of contaminated soil and water.
Wi Qtr. 4 cl. 1-3-1 hr. labs. Prereq: 610 and Microbiol 509; or permission of instructor.

820† Advanced Hydrology G 5
Advanced analysis of classic concepts; study of new techniques and concepts developing in modern hydrology; written and oral presentations of critical reviews of current literature.
Wi Qtr. 5 cr. Prereq: 813 or equiv.

821 Sediment Transport and Engineering G 4
Sediment properties, fall velocity, entrainment, resuspension, bed features, meanders, channel roughness, suspended, and bed load; measurement; siltation ponds, reservoirs, channel mechanics, bank protection, and stabilization. Bedford.
Sp Qtr. 4 cl. Prereq: 723.

823† Numerical Models in Water Resources Engineering G 5
Lake, river, and coastal contaminant or heat numerical transport model formulation; averaging, finite difference, element methods; errors, stability, data requirements, verification procedures.
Wi Qtr. 5 cl. Prereq: 723 or permission of instructor.

824† Advanced Coastal Engineering G 4
Coastal turbulent transport processes; fluctuation spectra; flood forecasting, storm surge models; harbor oscillations, resonance, and design; erosion processes and protection strategies; topical problems as required.
Sp Qtr. 4 cl. Prereq: 824 and 725.

830 Earthquake Engineering G 5
Analysis and design of structures subject to seismic loading; design of structures to minimize earthquake damage; high-rise buildings; seismic risk analysis; knowledge engineering in earthquake engineering. Adel.
Wi Qtr. 5 cl. Prereq: 734.

831† Advanced Reinforced Concrete G 5
Concrete structural analysis and design; special structural systems and elements.
Au Qtr. 5 cl. Prereq: 731 and 737.

832 Advanced Behavior and Design of Metal Structures G 5
Design of steel structures; steel bridges; braced and unbraced frames; tall buildings; connections; load and resistance factor design; computer-aided design; stability of metal structures; torsion, and lateral-torsional buckling. Adel.
Sp Qtr. 5 cl. Prereq: 532 and 738.

8331 Concrete Shell Structures G 5
Analysis and design of folded plate, cylindrical shell, axisymmetric and doubly curved shell structures including domes, hyperboloid and ellipsoidal paraboloids.
Sp Qtr. 5 cl. Prereq: 735 and Math 512.

836† Advanced Matrix Analysis of Structures G 5
General force methods of analysis; formulation of non-linear behavior of trusses and frames; solution of non-linear structures; analysis of surface structure; application of finite element methods in structural analysis.
Sp Qtr. 5 cl. Prereq: 735.

837† Advanced Structural Dynamics G 5
Stresses and deflections in structures under dynamic loads; response of large structural systems to earthquake, wind, moving loads; approximate and exact solution techniques.
Sp Qtr. 5 cl. Prereq: 734 or Eng Mech 731.

838† Two-Dimensional Problems in Linear Solids G 4
Solution of two-dimensional boundary value and initial boundary value problems for linear solids; geometric nonlinearities; refined theories; variational principles; approximate and exact solution techniques.
Wi Qtr. 4 cl. Prereq: 856 and Eng Mech 740 and 754.

839† Finite Element Method in Engineering Science G 5
Approximation of boundary value and initial value problems; variational methods, hybrid and mixed method; convergence and accuracy of finite element approximations; recent developments, advanced applications.
Sp Qtr. 5 cl. Prereq: 763 or Eng Mech 763 and Math 601 or equiv. Not open to students with credit for Eng Mech 839. Cross-listed in Engineering Mechanics.
850 Advanced Seepage in Permeable Materials G 4
Analysis of seepage and consolidation in soils by closed form and by numerical methods. Moore.
Au Qtr. 4 cl. Prereq: 750.

851 Advanced Soil Properties G 4
Detailed study and analysis of the mechanical properties of soils, with applications to foundation behavior.
Au Qtr. 4 cl. Prereq: 651.

852 Advanced Civil Engineering Materials G 4
Analysis and design of materials for pavements and other civil engineering projects; properties considered include fracture, fatigue, and physical-chemical composition.
Wi Qtr. 3 cl, 1-3-hr lab. Prereq: 753 and 754.

853 Advanced Soil Mechanics G 4
Stability of slopes and foundations; use of plasticity theory, numerical methods, and probability methods.
Wi Qtr. 4 cl. Prereq: 851.

855* Soil-Structure Interaction G 4
Interactions between soil and various structures, walls, bulkheads, foundations, and piles.
Au Qtr. 4 cl. Prereq: 851.

856* Viscoelasticity G 4
Viscoelastic materials and their characteristics, discrete element models, spectral representation, creep and relaxation functions, and dynamics of viscoelastic behavior.
Wi Qtr. 4 cl. Prereq: 754 and Math 512.

858 Soil Dynamics G 4
Stress waves in soils and vibrations in soil masses; liquefaction, determination of dynamic properties of soils; soil behavior under impact, machine, and seismic loads; seismic response of earth structures; design problems.
Sp Qtr. 4 cl. Prereq: 851 and Eng Mech 731, or permission of instructor.

859 Advanced Soil Properties Laboratory G 2
Experimental methods to evaluate the engineering properties of soils.
Wi Qtr. 1 cl, 1-3-hr lab. Prereq or concur: 851.

862 Advanced Mechanics of Structural Composites G 3
An introduction to current important topic areas in structural composites; among these topics are fracture mechanics and models, energy method modeling, dynamic structural response, and numerical modeling schemes.
Sp Qtr. (Even years). 2 1/2-hr cl. Prereq: 762 or Eng Mech 762 or Mech Eng 762. Not open to students with credit for Eng Mech 862 or Mech Eng 862. Cross-listed in Engineering Mechanics and Mechanical Engineering.

872 Area Traffic Control G 5
Design and performance criteria for area traffic control; design of traffic surveillance and monitoring systems; corridor and network control strategies; on-line computer control algorithms.
Wi Qtr. 4 cl, 1-3-hr lab. Prereq: 774 or equiv.

873 Urban Transportation Demand Forecasting G 5
Travel surveys and data needs; applications of statistical methods to develop models of ownership, trip generation, vehicle occupancy and modal choice; disaggregate models.
Sp Qtr. 4 cl, 1 3-hr lab. Prereq: 775 and Stat 525 or equiv with written permission of instructor.

874 Urban Transportation Network Analysis G 5
Network representation methods; minimum-path trees; traffic assignment algorithms and their performance; trip distribution models; new directions.
Wi Qtr. 4 cl, 1-2-hr lab. Prereq: 775 and Stat 525 or equiv with written permission of instructor. Not open to students with credit for Ind Eng 674. Cross-listed in Industrial and Systems Engineering.

881 Computer Aided Construction Automation and Simulation G 5
Computer modeling to automate and simulate construction operations.
Wi Qtr. 2 2-hr cl, 1 hr arr. Prereq: 882.

882* Probabilistic Construction Estimating and Pricing G 5
New models and methods of estimating and pricing; the examination of data from contracting companies; the utility of percentile distributions, skewness and kurtosis distributions.
Sp Qtr. 3 cl, 6-hrs lab. Prereq: 685, Stat 525, and Bus Adm 801.05 or equivs.

883* Design of Construction Operations G 5
Computer assisted construction operations decisions; traditional approaches; linear optimization and simulation case studies.
Au Qtr. 3 cl, 6-hrs lab. Prereq: 882.

884* Construction Forensics G 5
Construction engineers as expert witnesses and consultants on prevention and resolution of disputes; investigations, pre-trial examination; governmental and private sector case studies.
Au Qtr. 3 cl, 6-hrs lab. Prereq: 882 and 888.

885 Advanced Civil Engineering G 3-5
Opportunity for advanced students to pursue advanced study; work undertaken may be elected in the fields of civil engineering listed below.
Su, Au, Wi, Sp Qtr. Prereq: Permission of dept chairperson. Repeatable to a maximum of 20 or hrs with not more than 10 in any one of the fields listed below.
A— Structural Engineering
B— Geotechnical Engineering
C— Sanitary Engineering
D— Highway and Transportation Engineering
E— Remote Sensing and Environmental Surveys
F— Construction
G— Materials
J— Hydraulics and Hydrology

888 Event Tree, Fault Tree, and Fuzzy Systems in Construction G 5
Event tree and fault tree analyses; fuzzy set/logic concepts; fuzzy expert systems; fuzzy fault tree expert systems in construction.
Sp Qtr. 4 cl, 1-3-hr lab (arr). Prereq: 761.

894 Group Studies in Civil Engineering G 3-5
Advanced topics in the various fields of civil engineering; the particular topics, the number of credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs with not more than 10 in any one field of civil engineering.

899 Interdepartmental Seminar G 1-5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

900 Civil Engineering Practicum G 1-3
Supervised field experience in civil engineering; analysis and critique of field experience.
Su, Au, Wi, Sp Qtrs. Prior approval of civil en grad committee required.

903 Advanced Problems in Civil Engineering G 3-5
Provides the opportunity to pursue special problems in Civil Engineering not otherwise covered. Report required.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 hrs. This course is graded SU.

999 Research in Civil Engineering G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded SU.

Classics
414 University Hall, 230 North Oval Mall, 292-2744
See also Greek, Latin, Medieval and Renaissance Studies, and Modern Greek.

101 Masterpieces of Greek Literature in Translation U 5
Introductory survey of the Greek achievement in literature and its contribution to Western thought; selected readings in English translation in major authors from Homer through the Hellenistic age.
Au, Wi, Sp Qtrs. 5 cl. H101 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 220. GEC arts and hums lit course.

102 Masterpieces of Latin Literature in Translation U 5
Introductory survey of Roman literature and its importance in the Western literary tradition; selected readings in English translation in major authors, such as Plautus, Vergil, and Ovid.
Wi Qtr. 5 cl. H102 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 221. GEC arts and hums lit course.

150 Latin and Greek Elements in English Vocabulary U 3
Study of the flow of Latin and Greek elements into English vocabulary and of the processes of word formation using these elements.
3 cl.
220 Classical Background of Scientific Terminology U 3
Study of technical and scientific terms from Greek and Latin sources; roots, word elements, word formation, analysis; helpful in medical, biological, and kindred studies.
Au, Wi, Sp Qtrs.

222 Classical Mythology U 5
Origins and attributes of the Greek and Roman gods and goddesses, their mythology and its influence on Western culture.
Au, Wi, Sp Qtrs. 5 cl. H222 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for H122. GEC arts and humanities 3 cr. course.

H223 Freshman/Sophomore Honors Seminar: Topics in Ancient Literature and Society U 5
A discussion-oriented exposure to some of the most renowned works of ancient literature and/or ancient cultural issues.
Au, Wi, Sp Qtrs. 2.2-hr cl. Prereq: Admission to the honors program.

224 Classical Civilization: Greece U 5
A survey of ancient Greek civilization, concentrating upon important facets of literature, history, art, and archaeology.
Wi Qtr. 5 cl. Not open to students with credit for H124. GEC arts and humanities 3 cr. course.

225 Classical Civilization: Rome U 5
A survey of the civilization of ancient Rome, concentrating upon important facets of literature, history, art, and archaeology.
Au Qtr. 5 cl. Not open to students with credit for H125. GEC arts and humanities 3 cr. course.

240 Classical Archaeology U 5
Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.
5 cl. Not open to students with credit for History 240 or 306 or Hist Art 240. Cross-listed in History as 206 and in History of Art as 240. GEC arts and humanities 3 cr. course.

294 Group Studies U 1-5
Topics in classical studies.
H294 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr. hrs.

301 Greek and Roman Epic U 5
Study of Greek and Roman epic based on extensive readings in English translation.
Au Qtr. 5 cl. Not open to students with credit for 503.

302 Greek and Roman Drama U 5
Study of Greek and Roman drama based on extensive readings in English translation.
Wi Qtr. 5 cl. Not open to students with credit for 502.

303 Comic Spirit in Antiquity U 5
Study of the comic literature of the Greco-Roman world based on extensive readings in English translation drawn from epic, drama, satire, and the novel.
5 cl. Not open to students with credit for 502.

322 The Hero in Classical Mythology U 5
The development and interpretation of the major cycles of classical saga based on extensive readings in Greek and Roman epic and drama.
6 cl. Prereq: 222. Not open to students with credit for 223.

323 Religion in the Greco-Roman World U 5
Study of Greek and Roman religious movements including the beginnings of Christianity; readings in English translation of the major primary texts.
5 cl. Not open to students with credit for 504.

505 Political Thought and Institutions in the Greco-Roman World U 5
Selected topics concerning the development of ancient political theory.
2.2-hr cl.

506 Greek and Roman Science and Technology U 5
The origins and achievements of Greek and Roman science and technology.
5 cl.

508 Women in Greece and Rome U 5
Roles of women in ancient society, literature, and art.
Sp Qtrs. 5 cl.

611+ Studies in Greek or Latin Epigraphy U G 5
2-2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 811. Repeatable to a maximum of 10 cr. hrs.

692 Workshop U G 1-6
Su Otr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr. hrs.

694 Group Studies U G 1-5
Investigation of particular problems in various areas of classical studies. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr. hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign

599 Senior Tutorial and Essay U 5
Individual work leading to the writing of a final paper that will integrate the experience of earlier courses in classics.
Au, Wi, Sp Qtrs. Open only to sr s majoring in classics.

H793 Honors Research U 3-5
A program of study arranged for each student, with individual conferences, reports, and an honors thesis.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the classics courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr. hrs. This course is graded S/U.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr. hrs with permission of dept.

800 Materials and Methods of Research G 3
The materials, problems, and methods of classical research.
3 cl. Required of all grad students.

801 Materials and Methods of College Teaching of Classics G 3
Methods and techniques for teaching Latin, Greek, and courses in classical subjects at the college level.
Two wks intensive workshop previous to the beginning of qtr. This course is graded S/U.

810+ Linguistic Studies in Greek and Latin G 5
Topics may include Greek dialects, Italic dialects, or comparative grammar of Greek and Latin.
2-2-hr cl. Repeatable to a maximum of 15 cr. hrs.

812+ Studies in Greek or Latin Paleography and Textual Criticism G 5
A study of Greek or Latin handwriting in ancient documents and later manuscripts and the principles of textual criticism.
1.2-hr cl. Repeatable to a maximum of 10 cr. hrs.

856+ Studies in Greek or Roman Topography G 5
The topography and archaeology of ancient Athens, Rome, or other sites important to Greco-Roman literature and civilization.
2.2-hr cl. Repeatable to a maximum of 10 cr. hrs.

870 Studies in Greek and Roman Religion and Myth G 5
Focusses on single issues within ancient religion and myth, as chosen by instructor.
Au, Wi, Sp Qtrs. 1.3-hr cl. Prereq: Reading knowledge of Greek and/or Latin preferred; special arrangements can be made for exceptional students without reading knowledge. Repeatable to a maximum of 10 cr. hrs.

880 Topics in Classical Antiquity G 5
In-depth examination of issues that are often difficult to address in courses that focus on a single ancient author.
Au, Wi, Sp Qtrs. 1.3-hr cl. Repeatable to a maximum of 15 cr. hrs.
Comparative Studies in the Humanities 85

239 City and Country in America U 5
Interdisciplinary perspectives on the development, accuracy, and influence of popular images and stereotypes of city and country.
5 cl. Prereq: Soph standing and English 110 or 111 or equiv.

H240 The Nature of Modernity: Key Ideas and Enduring Problems U 5
Examination of some of the defining ideas of modern thought and how those ideas have problematically affected modern life in both developed and developing countries.
5 cl. GEC arts and hums lit course.

270 Introduction to Comparative Religion U 5
Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities.
H270 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for REL STD 270. Cross-listed in Religious Studies. GEC arts and hums cultures and ideas course.

272 Science and Society U 5
Critical analysis of the multiple relations of science to society, with emphasis on knowledge, power, authority, values, and ethics.
Sp Qtr: 2.2-2 hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

273 Introduction to Comparative Literature U 5
Analysis of oral and written literatures of diverse cultures and historical periods; their relation to issues as cultural difference, national identity, and textual authority.
Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

293 Individual Studies U 2-5
Designed to give students an opportunity for personal study with a member of the faculty.
Prereq: Permission of instructor. Repeatable to a maximum of 10 cl hrs.

294 Group Studies U 1-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
H294 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cl hrs.

298 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

299.01 Domestic

299.02 Foreign

301 Love in World Literature U 5
Representations of love in world literature; emphasis on mythological, psychological, and ideological aspects of selected representations in different cultures and time periods.
H301 (honors) may be available to students in an honors program. Prereq: 3 cl hrs in literature and English 110 or 111 or equiv. GEC arts and hums lit course.

305 Medicine and the Humanities U 5
Humanistic, scientific, and clinical perspectives on medical issues; literary uses of medical themes; medicine as art and science.
Prereq: Soph standing and English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

306 The Quest in World Literature U 5
Motif of the quest in world literature; physical and mental journeys as metaphors of personal transformation and salvation.
5 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 205. GEC arts and hums lit course.

308 Representations of the Experience of War U 5
Representations of war in works of literature, religious texts, and film from diverse cultures and time periods.
Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

314 Women in East Asian and Asian-American Literature U 5
Critical analysis of East Asian and Asian-American women's experience, examining gender and sexual differences in the distribution of political power and discourse.
Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

315 Women and Religion U 5
Modern women writers' search for feminist alternatives to traditional and patriarchal religious beliefs.
Prereq: 3 cl hrs in literature or women stds, and English 110 or 111 or equiv.
335 Engineering in Global Perspective U 5
Examination of the social context of engineering in cross-cultural perspective; includes ethnographic and historical studies of engineering practices from both western and non-western nations.
Sp Qtr. 2 2-hr. cl. Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

358 Film and Literature as Narrative Art U 5
Relationships between film and literature; emergence of cinematic art as a form of representation with emphasis on diverse cultural traditions. 2 2-hr cl. and 1 1-hr. cl. Prereq: 5 or hrs in literature or comp std. GEC arts and hums VPA course.

367 Second Writing Course U 5
GEC second writing and social diversity courses.

367.01 American Identity in the World
American culture viewed from inside and from the perspective of foreign cultures, as seen in literature, film, art, music, journalism, folklore, and popular culture. Prereq: English 110 or 111 or equiv, and soph standing. H367.01 [honors] may be available to students enrolled in an honors program or by permission of instructor. Not open to students with credit for 250.

367.02 Values, Science, and Technology in American Culture: An Introduction
Role of science and technology in contemporary American society; their relationship to human values, sources of concern about their impact; evaluation of selected issues. H367.02 [honors] may be available to students enrolled in an honors program or by permission of instructor. Not open to students with credit for 250.

367.03 Religious Diversity in America
Exploration of the concept of religious freedom and the position of minority religious groups in American society.
5 cl or 2 2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing.

470 Folklore of the Americas U 5
Comparative study of folklore and folk groups of the Americas; topic varies: folk narratives, beliefs, customs, practices of Latin/A, Asian, African, Native, and Anglo cultures. Au Qtr. 2 2-hr cl. Prereq: English 110 or 111, or equiv. Repeatable to a maximum of 15 or hrs.

496 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

498.01 Domestic
498.02 Foreign

500 Conceptual Approaches to International Studies U 5
Exploration of classic and contemporary conceptual approaches to international studies used by anthropologists, economists, geographers, historians, political scientists, and psychologists. 2 2-hr cl. Prereq: 15 or hrs of course work in one or more relevant disciplines and permission of instructor. Not open to students with credit for Int Stud 500. Cross-listed in International Studies.

510 The 20th-Century Novel: Transnational Contexts U G 5
Analysis of 20th-century fiction from western and nonwestern traditions; issues include colonialism, post-colonialism, nationalism, capitalism, revolution, migration. Au Qtr. 2 2-hr cl.

513 European Intellectual and Cultural History U G 5
2 2-hr cl. Cross-listed in History.

513.01 The Age of Modernity in the 19th Century
Intellectual and cultural history in Europe in the 19th century with emphasis on historical events which marked the formation of historical consciousness in the 19th century. Wi Qtr. Not open to students with credit for 622.01, or History 513.01 or 513.02.

513.02 The Age of Modernity in the 20th Century
Intellectual and cultural history in Europe in the 20th century with emphasis on historical events which marked the formation of historical consciousness in the 20th century. Sp Qtr. Not open to students with credit for 622.02, or History 513.02 or 513.02.

541 Myth and Ritual U G 5
Ritual, myth, and literature: structural and thematic relationships.
Prereq: 10 or hrs in literature or grad standing. Not open to students with credit for 501 or 541.01 or 541.02.

597 Values, Science, and Technology in Global Perspective U 5
Examination of how values, science, and technology interact in transforming the world in which we live as well as our understanding of that world.
5 cl. Prereq: Sr standing and completion of GEC second writing course, quantitative and logical skills requirement, and natural science sequence; or permission of instructor. 250 or 367.02 recommended. GEC contemporary world course.

645 Studies in Korean-American Literature U G 5
Critical study of Korean-American literature and literary genres of the twentieth century, with particular attention to historical, social and cultural contexts.
Au Qtr. 2 2-hr cl. Prereq: 10 or hrs in literature or grad standing or permission of instructor. Not open to students with credit for Korean 645. Cross-listed in Korean.

651 Topics in Comparative Studies U G 5
Critical study of selected themes and topics in a comparative and cross-cultural perspective; emphasis on issues of method, critical theory, representation, power, knowledge, and authority.
2 2-hr cl. Prereq: One course in comp std or rel stds; or grad standing or permission of Instructor. Repeatable to a maximum of 15 or hrs.

660 Modernism: Its Origins and Development in 20th-Century Culture and Politics U G 5
Origins and development of the modernist sensibility in 20th-century art, literature, social theory, and politics.
5 cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for this topic under 694.

677 Studies in World Folklore U G 5
2 2-hr cl. Prereq: English 270 or grad standing. Each decimal subdivision is repeatable to a maximum of 10 or hrs, including or hrs earned in 577.

677.01 Genres of Folk Literature
Historical and cross-cultural study of genre theory; comparative study of specific genres of folk literature, e.g., fairy tales, folk tales, legends, epics, and jokes.

677.02 Themes in World Folklore
Cross-cultural, cross-genre study of folklore themes; e.g., folklore of sex, folklore of religion; multidisciplinary perspective employs anthropological, psychological, and literary theory.

677.03 Folk Custom, Art, and Material Culture
Study of folk customs, arts, and material culture; theoretical emphasis on structural affinities of these with other folk forms, including verbal art, ritual, festivity, folk religion.

677.04 Comparative Folk Groups
Comparative study of ethnic, regional, religious, kin, occupational, age or sex groups; emphasis on range of historical and contemporary theoretical perspectives used to understand groups.

678 Studies in Chinese-American Literature U G 5
Critical study of modern Chinese-American literature in historical and cultural context; topics vary: gender issues, genre studies, women's writing.
Au Qtr. 2 2-hr cl. Prereq: 10 or hrs in any literature or grad standing or permission of instructor. Not open to students with credit for Chinese 678. Repeatable to a maximum of 10 or hrs. Cross-listed in Chinese.

693 Individual Studies U G 1-10
Designed to give able students an opportunity to pursue special studies not otherwise offered.
Prereq: Jr standing and permission of chairperson. Not open to freshmen or sophomores. Repeatable to a maximum of 15 or hrs. This course is graded F/A/D.

694 Group Studies U G 3-5
Special topics.
Repeatable to a maximum of 15 or hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign
710 Approaches to Comparative Cultural Studies I G 5
Historical perspectives on modernity and difference; introduction to issues and methods involved in evaluating and comparing authoritative discourses (literary, religious, scientific) and other cultural processes.
2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for Comp Std 792 Wi Qtr 1994.

711 Approaches to Comparative Cultural Studies II G 5
Contemporary practices of contextualization and comparison; exploration of issues and methods involved in situating and comparing authoritative discourses (literary, religious, scientific) and other cultural processes.
2 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for Comp Std 792 Sp Qtr 1994.

730 Culture, Science, and Technology U G 5
Introduction to comparative and cultural studies of science and technology. Wi Qtr. 2 2-hr cl. Prereq: 711 or permission of instructor.

739 Comparative Constitutional Politics G 5
Compares constitutions and constitutionalism across cultures and through different disciplines with special attention to how people make claims to secure their rights and interests.
Au Qtr. 1 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for History 739. Cross-listed in History.

770 Introduction to Graduate Study in Folklore G 5
A two-course sequence in current scholarship and methods necessary for advanced study in folklore.
2 2-hr cl. Cross-listed in English.

770.01 Approaches and Research Methods
Bibliography, research, and critical approaches for the advanced study of folklore.
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Not open to students with credit for English 770.01.

770.02 Field Research
Methods and theory of field research and field ethics necessary for advanced study in folklore.
Prereq: Grad standing or permission of instructor. 770.01 or English 770.01 recommended. Not open to students with credit for English 770.02.

H783 Honors Research U 5-10
Senior honors course leading to graduation with distinction; independent study for the student with special aptitude.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the comp stds courses taken and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 10 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

790 Foundations of Contemporary Critical Theory U G 5
Interdisciplinary survey of the theoretical bases of major contemporary approaches to the study of literature; readings in Marx, Freud, Deirdra, Cixous, and others.
2 2-hr or 5 cl. Prereq: Jr or sr or grad standing. Cross-listed in English, French, German, Italian, and Spanish.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Arr. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

830 Science and Difference G 5
Explores scientific constructions of difference (racial, gender, sexual, cultural) and the consequences of difference for the making of science.
Sp Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

890 Interdepartmental Studies in Critical Theory G 5
Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.
2 2-hr or 5 cl. Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in English, French, German, Spanish, and Women's Studies.

998 Research in Comparative Studies: Thesis G Arr
Research for master's thesis.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Computer and Information Science

395 Dreesle Ave, 2015 Neil Avenue, 292-5813

100 Introduction to Computing Technology U 3
A course of general interest giving experience with personal computer software, e.g., word processors and spreadsheets; provides fundamental computer literacy; neither teaches nor requires computer programming.
Su, Au, Wi, Sp Qtrs. 3 1-hr lec. Not open to students with credit for 101 or 200.

101 Computer-Assisted Problem Solving U 4
Problem solving techniques using productivity software: spreadsheets, formulas, conditional logic, relational databases, relational algebra; word processing; data presentation; graphics.
Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1.2-hr lab. Prereq: Mathematics placement level R or higher; or Math 075 or higher. Not open to students with credit for 100 or 200. GEC/GLR course.

200 Computer Assisted Problem Solving for Business U 5
Problem solving emphasizing spreadsheets and conditional logic; using productivity software: relational databases, word processing, data presentation, object linking and embedding, and communication systems.
Su, Au, Wi, Sp Qtrs. 4 1-hr lec, 1.2-hr lab. Prereq: Math 116, 130, or 148.

201 Elementary Computer Programming U 4
Introduction to computer programming and to problem solving techniques using computer programs; programming lab experience.
Su, Au, Wi, Sp Qtrs. 3 1-hr lec, 1.2-hr lab. Prereq: Mathematics placement level R or higher; or Math 075 or higher. Not open to students with credit for 211, 221, or En Graph 167. Pascal is taught.

211 Computer Programming for Problem Solving U 5
Introduction to the use of computers for problem solving; programming and spreadsheet assignments emphasize management-oriented problems. PASCAL and a spreadsheet program are taught.
Su, Au, Wi, Sp Qtrs. 4 cl, 3 hrs lab. Prereq: Math 116 or 130 or 148. Not open to students with credit for 201, 221, En Graph 167, or 200.

214 Data Structures for Information Systems U 4
Subroutines and modular programming; searching; basic data structures; recursion; introduction to sequential files.
Su, Au, Wi, Sp Qtrs. 3 cl, 3 hrs lab. Prereq: 201.

221 Software Development Using Components U 4
Component-based software from client programmer's perspective; intellectual foundations of software engineering; mathematical modeling; specification of object-oriented components; layering; testing and debugging layered operations.
Su, Au, Wi, Sp Qtrs. (H221: Wi Qtr.) 3 1-hr lec, 1 1-hr lab. H221 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Math 131; CtrInf/Inf 201 or En Graph 167 or CtrInf/Inf Placement Level A (H221: Math H16 or H190; CtrInf/Inf 201 or En Graph 167 or CtrInf/Inf Placement Level A). C++ is taught.

222 Development of Software Components U 4
Component-based software from implementer's perspective; container and graphical user interface components; data representation using layering and using pointers; introduction to algorithm analysis.
Su, Au, Wi, Sp Qtrs. (H222: Sp Qtr.) 3 1-hr lec, 1 1-hr lab. H222 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 221 (H221-H222) Not open to students with credit for 222.01 or 222.02. C++ is used.

230 Introduction to C++ Programming U 4
Introduction to programming in C++ and object-oriented programming; encapsulation using classes, inheritance, etc.
Au, Sp Qtrs. 3 cl, 3 hr lab. Prereq: 201 or En Graph 167 or equiv. Not open to CtrInf/Inf majors.

294 Group Studies U 1-5
This course is designed to give the student an opportunity to pursue special studies not otherwise offered.

Enrollment Priority
In this and subsequent CtrInf/Inf courses, enrollment priority will be given to CtrInf/Inf majors in Engineering and Arts and Sciences and to Information Systems majors in Business.

314 Business Programming with File Processing U 4
Business data processing principles and programming; sequential file processing algorithms, sorting, data validation. COBOL is taught.
Au, Wi, Sp Qtrs. 3 cl, 3 hrs lab. Prereq: 214 and a minimum CPHR of 2.0.
321 Design and Analysis of Component-Based Software U 4
Binary tree components and binary search trees; context-free grammars; regular expressions; parsing and tokenizing components; formal component composition; sorting components and sorting algorithms.
Su, Au, Wi, Sp Qtrs. 3 1-hr lab, 1 1-hr lab. Prereq: 222 and a minimum CPHR of 2.00. Prereq or concn: Math 366. C++ is used.

360 Introduction to Computer Systems U 4
Introduction to computer architecture at the machine language and assembler language level; assembler language programming and lab.
Su, Au, Wi, Sp Qtrs. 3 cl. 1 lab. Prereq: 214 or 222 and a minimum CPHR of 2.00.

459 Programming Languages for Programmers U 1
Elementary language constructs of various programming languages for students who are well versed in programming. 1 3-hr lab. Repeatable to a maximum of 2 cr hrs. This course is intended for experienced programmers who wish to learn an additional language. This course is graded S/U.

459.01 Programming in FORTRAN
Wi Qtr. Prereq: 314 or 321.

459.21 Programming in C
Su, Au, Wi, Sp Qtrs. Prereq: 314 or 321.

459.22 Programming in C++
Au, Wi, Sp Qtrs. Prereq: 321; and 459.21 or equiv.

459.23 Programming in JAVA
Elementary language constructs of JAVA for students who are well versed in programming.

459.31 Programming in LISP
Sp Qtr. Prereq: 314 or 321.

459.41 Programming in COBOL
Au Qtr. Prereq: 321. Not open to students with credit for 212 or 313 or 314.

460 Professional Practice in Industry U 2
Preparation and submission of a comprehensive report based on actual employment experience in a co-op job in industry.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in Cptfrnt. Repeatable to a maximum of 8 cr hrs. Or hrs to be used as free electives only. This course is graded S/U.

483 Individual Studies U 1-5
Planning, conducting, and reporting a special study appropriate to the needs of the student.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

516 Information Systems Analysis and Design U 4
Introduction to information systems development; development tools; structured analysis; data flow diagrams, data dictionary, process descriptions; students develop user specifications in a term project.
Su, Au, Wi, Sp Qtrs. 3 cl. 1 3-hr lab. Prereq: 570.

541 Elementary Numerical Methods U 3
Survey of basic numerical methods; number systems and errors of finite representation, solution of a single non-linear equation, interpolation, numerical integration, and solution of linear systems. 
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 201 or 211 or 221 or En Graph 167 or 200, and Math 153.

548 Computer Science for High School Teachers U 5
Introduction to computer history, organization, hardware, and software; laboratory experience using basic programming and time-sharing applications of computers with emphasis on uses in education and business.
Sp Qtr. 4 cl. Prereq: Permission of instructor. Open only to high school teachers. Primarily intended for science, math, or business teachers.

550 Systems Software Design, Development, and Documentation U 5
Software engineering as applied to various classical computer systems programs; assemblers, macroprocessors, loaders; major group project involving the design and implementation of systems software; communication skills emphasized.
Su, Au, Wi, Sp Qtrs. 4 cl. 1 3-hr lab. Prereq: 314 or 321 and 350 or 365 or Elec Eng 265, and a second writing course. GEOCLAR course.

570 File Design and Analysis U 3
Random file processing; file organization and access methods; time and space considerations. Introduction to relational database systems.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 314 or 321, and Math 366.

601 Social and Ethical Issues in Computing U 1
Social, ethical, and legal issues facing computing professionals; ethical principles; discussion of case studies.
Wi Qtr. 1 1/2-hr cl. Prereq: 560.

612 Introduction to Cognitive Science U 3
Cognitive science is an interdisciplinary study of the nature of human thought psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.
Wi Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor and a total of 12 cr hrs from at least two of the following areas: computer science, linguistics, philosophy, and psychology. Not open to students with credit for 612, Philos 612, Psych 612, 794 (Sp 89) or 794A (Wi 90). Cross-listed in Linguistics, Philosophy, and Psychology.

615t Arithmetic Algorithms U 3
Design, implementation, analysis, and application of computer algorithms for performing the arithmetic operations used in computer algebra systems; integer arithmetic, rational number arithmetic, and modular arithmetic.
Sp Qtr. 3 cl. Prereq: 680 or equiv and either Math 568 or 573 or equiv or permission of instructor.

621 Introduction to High-Performance Computing U 3
High-performance computer architecture, scientific/engineering computation, development of parallel programs, parallelization overhead, performance evaluation.
Au Qtr. 3 cl. Prereq: 541; Math 568 or Math 571 or Math 601. Course is well suited to grad students from science/engineering in addition to cptrntf students.

625 Introduction to Automata and Formal Languages U 3
Finite state automata, formal languages, context-free languages, pushdown automata, and Turing machines; Church-Turing thesis; Introduction to the halting problem.

630 Survey of Artificial Intelligence I: Basic Techniques U 3
A survey of the basic concepts and techniques, problem solving, and knowledge representation, including an introduction to expert systems.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 222 and Math 588 and sr/grd standing.

640 Numerical Analysis U 3
Analysis of numerical methods for ordinary differential equations, boundary value, and characteristic value problems, splines, non-linear equations, approximation of functions; standard mathematical software libraries.
Wi Qtrs. 3 cl. Prereq: 221 or equiv; Math 255 or 256 or 415; and 541 or grad standing.

642 Numerical Linear Algebra U 3
Iterative methods for the solution of linear systems, computation of eigenvalues and eigenvectors, linear programming-simpex method, use of standard mathematical software libraries.
Au Qtr. 3 cl. Prereq: 541; Math 568 or 571.

650 Information Storage and Retrieval U 3
Fundamental concepts of information storage and retrieval with emphasis on problems associated with textual databases; data representation and manipulation; content analysis and description; query languages and heuristics.
Au Qtr. 3 cl. Prereq: 570; and Stat 427 or equiv. Not open to students with credit for 750.

655 Introduction to the Principles of Programming Languages U 4
Programming language concepts such as grammars and parse trees; interpretation versus compilation, binding, and scope rules; and language constructs for control and data abstraction.
Au, Wi, Sp, Su Qtrs. 3 cl. 3 lab hrs. Prereq: 560 and 625.

660 Introduction to Operating Systems U 3
Operating system concepts: memory management, process management, and file management; sample operating systems.
Au, Wi, Sp, Su Qtrs. 3 cl. Prereq: 560; 570; 575 or Elec Eng 562; Stat 427.

662 Operating Systems Laboratory U 3
Construction of operating system components: scheduling, context switching, process management, message passing, memory management, interrupt processing.
Au, Wi Qtrs. 2 cl. 1 3-hr lab. Prereq: 459.21 and 660. Lab assignments are programmed in C. Not open to students with credit for 761.

670 Introduction to Database Systems U 3
Database models; database organization, database design, integrity and security; database systems and their utilization.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 570 or grad standing.

673 Database and Information Management for Manufacturing U 3
File and data management, information flow in manufacturing, handling of geometric data for CAD/CAM/CAE, and communication between different computer systems.
Sp Qtr. Prereq: 221 or permission of instructor. Not open to Cptfrntf majors. Open to students in Manufacturing Systems and Engineering Program.
675 Introduction to Computer Architecture U G
Computer system components; instruction set design, hardwired control units, arithmetic and logic units, microprogramming, microarchitectures, instruction formats, instruction encoding, instruction set architecture, system software, machine language, assembler language, control unit design, bus structures, interface design, input/output devices, 32-bit systems.
Prereq: 166 or 396.

675.01 Introduction to Computer Architecture U G 3
Wi, Sp Qtr. 3 cr. Prereq: 360 or Elec Eng 256; Math 368; Elec Eng 261; Not open to students with credit for 675.02. Intended for students without previous knowledge of Digital Logic Design.

675.02 Introduction to Computer Architecture U G 4
Au, Wi, Sp Qtrs. 4 cr. Prereq: 360 or Elec Eng 256; Math 368. Not open to students with credit for 675 or 675.01. Intended for students without previous knowledge of Digital Logic Design.

676 Microcomputer Systems U G 3
Bus structure; memory, interrupt, and I/O design; case studies on microprocessors and systems with emphasis on selection, evaluation, and applications based on their architectural features.
Wi, Sp Qtrs. 3 cr. Prereq: 675 or Elec Eng 456.

677 Introduction to Computer Networking U G 3
Data communications, network architecture, communication protocols, data link control, medium access control; introduction to local area networks, metropolitan area networks, and wide area networks; introduction to Internet and TCP/IP.
Au, Wi, Sp, Su Qtrs. 3 cr. Lab assignments are programmed in C. Prereq: Physics 112 or 132; 360 or Elec Eng 265; 450.21.

678 Internetworking U G 3
High-speed local area networks, metropolitan area networks, bridges, routers, gateways, TCP/IP, application services, network management.
Wi Qtr. 3 cr. Prereq: 660 and 677.

680 Data Structures U G 3
Data abstraction; introduction to algorithm analysis; data structures and file structures, including lists, trees, and graphs; searching and sorting.
Au, Wi, Sp, Su Qtr. 3 cr. Prereq: 560 and 570; Stat 427 or equiv; and Math 366; or grad standing.

681 Introduction to Computer Graphics U G 4
Introduction to display hardware and applications, interactive techniques, 2D and 3D transformations, clipping, 3D viewing, introduction to visible surface algorithms and illumination models.
Au, Wi, Sp Qtrs. 3 cr. 1 lab. Prereq: 560 or permission of instructor; Math 568 or 571.

693 Individual Studies U G 1-5
Designed to give the student an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Designed to give the student an opportunity to pursue special studies not otherwise offered.

721 Introduction to Parallel Computing U G 4
Principles and practice of parallel computing; design, implementation, and evaluation of parallel programs for shared-memory architectures, local-memory architectures, and vector processors.
Wi Qtr. 3 cr. 3 lab hrs. Prereq: 621, 621 previously taught as 694E.

725 Computability and Unsolvability U G 3
Time and space measures; Turing machine variants and RAM's; universal Turing machines; undecidable language problems; development of efficient algorithms.
Wi, Sp Qtrs. 3 cr. Prereq: 625.

727* Computational Complexity U G 3
Time and space complexity classes and hierarchies; deterministic and nondeterministic log space; polynomial time; polynomial space; complete and provably hard problems; random polynomial time.
Au Qtr. 3 cr. Prereq: 725 and 780.

730 Survey of Artificial Intelligence II: Advanced Topics U G 3
A survey of advanced concepts, techniques, and applications of artificial intelligence, including knowledge-based systems, learning, natural language understanding, and vision.
Au Qtr. 3 cr. Prereq: 630.

731 Knowledge-Based Systems U G 4
Theory and practice of expert systems and knowledge-based systems; use of current knowledge-based systems software tools.
Sp Qtr. 3 cr and 1-3 hr lab. Prereq: 580 and 630, or grad standing.

732t Computational Linguistics U G 3
Exploration of the computational processing of natural language; syntactic, semantic, and pragmatic processing techniques are applied to understanding and generating written English.
Au Qtr. 3 cr. Prereq: 770; Linguistics 601 or permission of instructor.

737* Preseminar in Cognitive Science U G 2
An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline; provides illustrations of representational research being conducted at OSU.
Sp Qtr. 1-2 hr cr. Prereq: CIB 612, Linguistics 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Industrial Systems Engineering, Linguistics, Philosophy, Psychology, and Speech and Hearing Science.

739 Knowledge-Based Systems in Engineering U G 3
Application of knowledge-based systems principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation.
Sp Qtr. 2-1/2 hr cr. Prereq: 630 or permission of instructor. Cross-listed in Chemical, Mechanical, and Nuclear Engineering.

741 Comparative Operating Systems U G 3
A careful examination of a number of representative computer operating systems.
Su Qtr. 3 cr. Prereq: 660 or equiv.

752 Techniques for Simulation of Information Systems U G 3
Introduction to the methodology and techniques of the design of computer simulation of information systems.
Au Qtr. 3 cr. Prereq: Stat 428 or equiv.

755 Programming Languages U G 3
Procedural abstraction, data abstraction, control abstraction (determinism, concurrency, etc.); operational semantics, denotational semantics, specification, and verification of programs.
Wi, Sp Qtrs. 3 cr. Prereq: 655 and Math 366.

760 Compiler Design and Implementation U G 4
Syntactic and semantic analysis using formal models, automatic programming, generation of optimal code, synthesis of messages, design of incremental programming environments; students write a simple translator.
Au Qtr. 3 cr. 1 lab. Prereq: 459.21, 625, 655, and 680. Lab assignments are programmed in C.

770 Software Engineering U G 3
Principles of design, implementation, validation, and management of computer software; emphasis on reading and discussing papers from relevant journals and proceedings; term project required.
Au, WiQtrs. 3 cr. Prereq: 560 or equiv and or grad standing or permission of instructor.

778 Software Engineering Project U G 4
Principles and applications of programming team organization, cost estimation, scheduling, requirements analysis, design, documentation, programming-in-the-large, group reviews, testing, and debugging.
Au, Sp Qtrs. 3 cr. 3 lab hrs. Prereq: 757.

780 Operating Systems U G 3
Advanced operating system concepts: process synchronization, process deadlock, security and access control, distributed operating system principles and prototypes.
Au, Wi Qtrs. 3 cr. Prereq: 660 or equiv.

782 Advanced Operating System Laboratory U G 3
Construction of advanced operating system components: internet, client-server, remote file server, distributed namespace, user interface software. Sp Qtr. 2 cr. 3 lab hrs. Prereq: 662. Lab assignments are programmed in C.

783 Introduction to Distributed Computing U G 3
Concepts and mechanisms in design of distributed systems; process synchronization, global state: reliability; distributed resource management; deadlock, performance evaluation; representative distributed operating systems.
Sp Qtr. 3 cr. Prereq: 760.

7851 Management Information Systems U G 3
Theory and practice of management information systems from the viewpoint of computer and information science; systems approach to management and organization; significance of information.
Wi Qtr. 3 cr. Prereq: Grad standing in CptInf or permission of instructor.
770 Database Systems  U  G 3
Fundamental design considerations, system principles and machine organizations of database systems; performance analysis of database alternatives, system configurations and hardware organizations; impact of applications and technology on database systems.
Wi Qtr. 3 cl. Prereq: 680 and 670.

772 Information System Project  U  G 4
Information system design and development principles: requirement analysis, database design methods and tools, process design, application development tools, testing, evaluation, and documentation. Group-term project.
Wi Qtr. 3 cl, 3-hr lab. Prereq: 516 or 757, and 560 and 670.

775 Computer Architecture  U  G 3
Microprogramming, bit-slice logic, reduced instruction set computer architecture, advanced memory organizations, introduction to parallel computer architectures, and performance models/evaluation.
Au, Sp Qtrs. 3 cl. Prereq: 660, 675 or Elec Eng 562.

776 Hardware/Software Interface Design Project  U  G 4
Principles and application of hardware and software design: design, programming, testing, and evaluation of an autonomous mobile robot system.
Sp Qtr. 2 1-hr cl, 2 1-hr lab. Prereq: 459.21, 660, Elec Eng 567 or 329, or permission of instructor.

777 Telecommunication Networks  U  G 3
Broadband integrated services digital networks, asynchronous transfer mode, gigabit networks, wireless networks, multimedia networks, all optical networks, synchronous optical network.
Sp Qtr. 3 cl. Prereq: 677.

778 Computer-Aided Design and Analysis of VLSI Circuits  U  G 4
VLSI design methodology; specification of VLSI circuits at various levels of abstraction; design, layout, and computer simulation of circuits; high-level synthesis; design projects.
Au Qtrs. 3 cl, 1 3-hr lab. Prereq: 560, Elec Eng 561; and 675 or Elec Eng 562.

779 Introduction to Artificial Neural Network Methods  U  G 3
Wi Qtr. 3 cl. Prereq: 630 or Elec Eng 762: Not open to students with credit for Elec Eng 779. Cross-listed in Electrical Engineering.

780 Analysis of Algorithms  U  G 3
Algorithm design paradigms; mathematical analysis of algorithms; NP-completeness.
Au, Wi Qtrs. 3 cl. Prereq: 680 or grad standing and equiv of 680.

781 Introduction to 3D Image Generation  U  G 4
3D viewing algorithms, advanced illumination models, smooth shading, shadows, transparency, ray tracing, and color models.
Au, Sp Qtrs. 3 cl, 1 1-hr lab. Prereq: 459.21, 675; 681 or permission of instructor; Math 568 or 571. Lab assignments are programmed in C.

782 Advanced 3D Image Generation  U  G 3
Advanced topics in rendering 3D realistic imagery including texture mapping, sampling theory, advanced ray tracing, radiosity, 3D rendering hardware, introduction to surfaces, animation, and volume graphics.
Wi Qtr. 3 cl. Prereq: 781. Lab assignments are programmed in C.

H783 Honors Research  U 1-5
Supervised research and project work arranged individually for honors students.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Honors standing; permission of instructor. Repeatable to a maximum of 12 cr hrs. Limitations on number of credit hours applicable toward degree are governed by departmental rules. This course is graded S/U.

788 Intermediate Studies in Computer and Information Science  U  G 1-5
Intermediate work in one of the specialized areas of computer and information science is offered.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs; subdivisions repeatable.

H788.01 Computational Complexity
H788.02 Information Systems and Database Systems
H788.03 Symbolic Computation
H788.04 Artificial Intelligence

H788.06 Operating Systems and Systems Programming
H788.07 Programming Languages
H788.08 Computer Organization
H788.09 Numerical Analysis
H788.11 Parallel and Distributed Computing
H788.12 Software Engineering
H788.14 Computer Graphics

793 Individual Studies  U  G 1-5
Designed to give the individual student an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 12 cr hrs for undergrad and 24 cr hrs for grad students. This course is graded S/U.

794 Group Studies  U  G 1-5
Designed to give students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

797 Interdepartmental Seminar  U  G 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.

881 Geometric Modeling  U  G 3
Common mathematical techniques for modeling objects in computer graphics applications. Representational schemes, common geometric operators, properties of solid models, solid model construction and data structures.
Sp Qtr. 3 cl. Prereq: 781, 541; or grad standing and permission of instructor. Lab assignments are programmed in C.

875 Advanced Computer Architecture  G 3
Advanced pipelining techniques, vector supercomputers, shared-memory and distributed-memory multiprocessors, massively parallel systems, multithreaded machines.
Sp Qtr. 3 cl. Prereq: 721.

885 Seminar on Research Topics in Computer and Information Science  G 1
Lectures on current research by faculty members in the department.
Au Qtr. 2 cl. Prereq: 1st yr grad student in Cptrinf. This course is graded S/U.

886 Advanced Studies in Computer and Information Science  G 1-5
Advanced work in one of the specialized areas of computer and information science.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 30 cr hrs; subdivisions repeatable. These courses are graded S/U.

886.01 Computational Complexity
886.02 Information Systems and Database Systems
886.03 Symbolic Computation
886.04 Artificial Intelligence
886.05 Operating Systems and Systems Programming
886.08 Computer Organization
886.09 Numerical Analysis
886.11 Parallel and Distributed Computing
886.12 Software Engineering
886.14 Computer Graphics

889 Advanced Seminar in Computer and Information Science  G 2
Selected topics of particular current interest in both the research and applications of computer and information science are considered.
Wi, Sp Qtr. 1 2-hr cl. Prereq: 2nd qtr grad standing in Cptrinf or permission of instructor. This course is graded S/U.

999 Interdepartmental Seminar  G 1-5
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Czech
232 Kuiz Hall, 1841 Millikin Road, 292-6733
See also Slavic Languages and Literatures.
101 Elementary Czech I
Development of oral and written language skills.
Not open to native speakers of this language through regular course
enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.
101.01 Classroom Track U 5
Au Qtr. 6 cr.
101.51 Individualized Track U 1-5
Students register for and complete from 1 to 5 cr hrs during the qtr.
Students who complete 5 cr hrs before the end of the qtr may proceed
to 102.51. Progress is sequential from one cr hr to the next, with
proficiency at the level of 80% required for advancement.
102 Elementary Czech II
Development of oral and written language skills.
Not open to native speakers of this language through regular course
enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.
102.01 Classroom Track U 5
Wi Qtr. 5 cr. Prereq: 101 or 101.01 or 5 cr hrs. of 101.51 or permission of
instructor.
102.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 101 or 101.01, or 5 cr hrs of 101.51, or
permission of instructor. Students register for and complete from 1 to 5
hrs during the qtr. Students who complete 5 cr hrs before the end of
the qtr may proceed to 102.51. Progress is sequential from one cr hr to
the next, with proficiency at the level of 80% required for advancement.
Students may register for 102.51 and 102.51 concurrently with permission
of instructor.
103 Intermediate Czech I
103.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 102 or 102.01, or 5 cr hrs of 102.51, or
permission of instructor. Not open to native speakers of this language
through regular course enrollment or EM credit. Students register for
and complete from 1 to 5 cr hrs during the qtr. Progress is sequential
from one cr hr to the next, with proficiency at the level of 80% required
for advancement. Students may register for 103.51 and 103.51 concurrently with permission of instructor. GEC for lang course.
104 Intermediate Czech II
104.51 Individualized Track U 1-5
Continuation of 103; development of the four skills.
Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to
students with credit for 111 or to native speakers of this language
through regular course enrollment or EM credit. Students register for
and complete from 1 to 5 cr hrs during the qtr. Progress is sequential
from one cr hr to the next, with proficiency at the level of 80% required
for advancement. Students may register for 104.51 and 104.51 concurrently with permission of instructor.
111 Intensive Intermediate Czech U 10
Readings, oral and written practice, grammar review.
Sp Qtr. 10 cr. Prereq: 102.01 or 5 cr hrs of 102.51 or eqv. Eqv to the 3rd
and 4th courses of the foreign language sequence. GEC for lang course.
405 Advanced Czech I
405.51 Individualized Track U 1-5
Continuation of 104.51; development of the four skills.
Prereq: 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for
and complete from 1 to 5 cr hrs during the qtr. Progress is sequential
from one cr hr to the next, with proficiency at the level of 80% required
for advancement. Students may register for 405.51 and 405.51 concurrently with permission of instructor.
407 Advanced Czech II
407.51 Individualized track U 1-5
Prereq: 5 cr hrs of 405.51 or permission of instructor. Students register for
and complete from 1 to 5 cr hrs during the qtr. Progress is sequential
from one cr hr to the next, with proficiency at the level of 80% required
for advancement. Students may register for 407.51 and 407.51 concurrently with permission of instructor.
500 Reading Czech I
500.51 Individualized Track U 1-5
Development of reading skills based on selections from 20th century
writers, mostly contemporary writers, and from the contemporary press.
Arr. Prereq: 5 cr hrs of 407.51 or permission of instructor. Students register for
and complete one to five cr hrs during the qtr. Progress is sequential
from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 500.51 and 500.51 concurrently with permission of instructor.
501 Reading Czech II
501.51 Individualized Track U 1-5
Continuation of 500.51; further development of reading skills.
Arr. Prereq: 5 cr hrs of 500.51 or permission of instructor. Students register for
and complete one to five cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 501.51 and 501.51 concurrently with permission of instructor.

Dance
030A Sullivan Hall, 1813 North High Street, 292-7977
111 Techniques and Materials of Dance I U 1-6
Each decimal subdivision repeatable to a maximum of 6 cr hrs.
111.01 Improvisation
Wi Qtr. Arr. Prereq: Qualifying audition or permission of instructor.
111.02 Dance Fundamentals
Sp Qtr. Arr. Prereq: 111.01 or qualifying audition or permission of instructor.
111.03 Introduction to Dance Composition
Sp Qtr. Arr. Prereq: 111.01 or qualifying audition or permission of instructor.
111.04 Modern Dance Technique, Part 1
Au Qtr. Arr. Prereq: Qualifying audition.
111.05 Ballet Technique, Part 1
Au Qtr. Arr. Prereq: Qualifying audition.
111.06 Modern Dance Technique, Part 2
Wi Qtr. Arr. Prereq: 111.04 or qualifying audition.
111.07 Ballet Technique, Part 2
Wi Qtr. Arr. Prereq: 111.05 or qualifying audition.
111.08 Modern Dance Technique, Part 3
Sp Qtr. Arr. Prereq: 111.06 or qualifying audition.
111.09 Ballet Technique, Part 3
Sp Qtr. Arr. Prereq: 111.07 or qualifying audition.
111.10 Music Skills
Au Qtr. Prereq: qualifying audition.
161 Dance and Theatre, 1945 to the Present U 5
Survey of contemporary practices in western dance and theatre from 1945
to the present, with emphasis on major stylistic trends, multicultural
influences, and principal artists and their works.
Su, Au, Wi, Sp Qtrs. 2.2 hr cl, 1.1 hr rec. Not open to students with credit
for Arts Col 161 or Theatre 181. Cross-listed in Theatre. GEC arts and
hums VPA course. VPA Admis Cond course.
190 Ethnic Dance Forms U 1-5
Folk forms as practiced by ethnic groups in selected cultures.
Au Qtr. Arr. Prereq: Qualifying audition or permission of instructor. Each
decimal subdivision repeatable to a maximum of 5 cr hrs.
190.01 Dance Forms of the African Diaspora
190.02 International Dance Survey
190.03 Other
198 Dance Production U 1-5
Production activities.
Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.
200 History of Ballet and Modern Dance U 5
The development of dance as a performing art from the Renaissance to the
present.
Wi, Sp Qtrs. 3.1 hr cl. GEC arts and hums VPA course. VPA Admis Cond
course.
201 Introduction to Dance I U 1-5
An introductory course in dance.
Su, Au, Wi, Sp Qtrs. Arr. Each decimal subdivision repeatable to a
maximum of 12 cr hrs. VPA Admis Cond course.
201.01 Modern Technique
201.02 Ballet Technique
201.03 Jazz
201.04 Other
201.05 Tap Technique
202 Introduction to Dance II U 1-5
Continuation of 201.
Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 12
cr hrs.
202.01 Modern Technique
Prereq: 201.01 or permission of instructor.
202.02 Ballet Technique
Prereq: 201.02 or permission of instructor.
202.03 Jazz
Prereq: 201.03 or permission of instructor.
203 Introduction to Dance III U 1-5
Continuation of 201 and 202.
Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 12
cr hrs.
203.01 Modern Technique
Prereq: 202.01 or permission of instructor.

203.02 Ballet Technique
Prereq: 202.02 or permission of instructor.

203.03 Jazz
Prereq: 202.03 or permission of instructor.

214 Dance Techniques II U 1-5
Technique: modern dance and ballet, level II.
Open only to dance majors. Each decimal subdivision repeatable to a maximum of 9 cr hrs.

214.04 Modern, Part 1
Au Qtr. Arr. Prereq: Juried examination with the completion of 111.08 or qualifying audition.

214.05 Ballet, Part 1
Au Qtr. Arr. Prereq: Juried examination with the completion of 111.01 or qualifying audition.

214.06 Modern, Part 2
Wi Qtr. Arr. Prereq: 214.04 or qualifying audition.

214.07 Ballet, Part 2
Wi Qtr. Arr. Prereq: 214.05 or qualifying audition.

214.08 Modern, Part 3
Sp Qtr. Arr. Prereq: 214.06 or qualifying audition.

214.09 Ballet, Part 3
Sp Qtr. Arr. Prereq: 214.07 or qualifying audition.

257 Modern Dance Overview U 3
An introduction to the history and aesthetic principles of modern dance from the turn of the 20th century to the present.
Wi Qtr. 2 1/2-hr cl. Prereq: Admission to dance major program.

289 Field Experience in Dance U 1-5
Foundations in dance education.
Prereq: Qualifying audition or permission of instructor.

289.01 Introduction to Dance Education
Survey of dance in public education: theoretical foundations and field-based experiences.
Sp Qtr. Arr.

289.02 Dance Education in Diverse Settings
Survey of dance in diverse community settings: theoretical foundations and field-based experiences.
Wi Qtr. Arr.

289.03 Other: Field Experience in Dance
Directed field experience emphasizing appropriate teaching strategies for different educational and community settings.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

293 Individual Studies U 1-5
Individual studies of specified problems in the field of dance.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies U 1-5
Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs.

299 Dance Performance U 1-5
Su, Au, Wi, Sp Qtrs. 2 or more hrs rehearsal wkly. Open only to dance majors; others by special permission. Each decimal subdivision repeatable to a maximum of 24 cr hrs. These courses are graded S/U.

299.04 Student Choreographic Projects
This course is graded S/U.

299.06 Workshops
This course is graded S/U.

534 Dance Techniques III U G 1-6
Technique: modern dance and ballet, level III.
Open only to dance majors. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

534.04 Modern, Part 1
Au Qtr. Arr. Prereq: Juried examination with the completion of 214.08 or qualifying audition.

534.05 Ballet, Part 1
Au Qtr. Arr. Prereq: Juried examination with the completion of 214.09 or qualifying audition.

534.06 Modern, Part 2
Wi Qtr. Arr. Prereq: 534.04 or qualifying audition.

534.07 Ballet, Part 2
Wi Qtr. Arr. Prereq: 534.05 or qualifying audition.

534.08 Modern, Part 3
Sp Qtr. Arr. Prereq: 534.06 or qualifying audition.

534.09 Ballet, Part 3
Sp Qtr. Arr. Prereq: 534.07 or qualifying audition.

579* University Dance Company U G 1-5
Su, Au, Wi, Sp Qtrs. Arr daily; rehearsal hrs 4:30-10:00 p.m. Admission by audition. Open only to dance majors; others by special permission. Repeatable to a maximum of 45 cr hrs.

601 Supplemental Studies in Dance U G 1-5
Foundations in dance.
Su, Au, Wi, Sp Qtrs. 2 or more lab hrs. Prereq: Permission of chairperson. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

601.01 Modern Technique

601.02 Ballet Technique

601.04 Tap Dance

601.05 Historical Dance

601.06 Jazz Dance

601.07 Alexander Technique
This course is graded S/U.

601.08 Other

601.09 Mexican Dance
Prereq: Permission of Instructor.

606* Dance Dynamics U G 3
Study of the dancer’s dynamic energy.
Wi Qtr. 2 1/2-hr cl. Prereq: 645 or Jr standing, or 845 and grad standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

606* Space Design U G 3
The study of spatial forms in dance.
Wi Qtr. 2 1/2-hr cl. Prereq: 620 and Jr standing, or 820 and grad standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

607 Intermediate Effort U G 3
Intermediate study of the dancer’s dynamic energy; continuation of 606. Sp Qtr. 2 1/2-hr cl. Prereq: 645 or permission of instructor. Not open to students with credit for 635. Repeatable to a maximum of 6 cr hrs.

610 Issues in Videodance U G 3
Investigation of aesthetic and technological components of dance and video as an introduction to studies in videodance production.
Sp Qtr. 1-hr cl. Prereq: 161 or 200 or 257 or Art Educ 160 or Arts Col 161 or Theatre 161, and Jr standing; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

615 Music Resources for Dance U G 2
Investigation of music skills and their application to teaching and choreography.
Su, Wi Qtrs. Arr. 1 2-hr cl. Prereq: 111.10 grad standing, or permission of instructor. Repeatable to a maximum of 4 cr hrs.

620 Dance Notation I U G 3
Basic principles of Labanotation; work in theory, readings, and writing using motif descriptions.
Au Qtr. Arr. Prereq: 1 yr as dance major or permission of instructor.

621 Dance Notation II U G 3
Continuation of 620; emphasis on Labanotation.
Wi Qtr. Arr. Prereq: 620 or permission of instructor.

622 Dance Notation III U G 3
Continuation of 621; emphasis on reading dance.
Sp Qtr. Arr. Prereq: 621 or permission of instructor.

623 Advanced Notation U G 3
Advanced Labanotation.
Wi, Sp Qtrs. Arr. Prereq: 622 or equiv with written permission of instructor. Repeatable to a maximum of 9 cr hrs.

624 Directing from Score U 4
Methods of teaching and coaching a dance learned from a Labanotated score.
Su, Au, Wi, Sp Qtrs. 3 1/2-hr cl. Prereq: 633. Repeatable to a maximum of 16 cr hrs.

633 Lighting for Dance U G 1-5
A study of stage lighting for dance; lectures, readings, and discussions.

637 Dance Technique IV U G 1-6
Technique: modern and ballet, level IV.
Open only to dance majors. Each decimal subdivision repeatable to a maximum of 12 cr hrs.
637.04 Modern, Part 1  
Au Qtr. Arr. Prereq: Juried examination with the completion of 534.08 or qualifying audition.

637.05 Ballet, Part 1  
Au Qtr. Arr. Prereq: Permission of instructor.

637.06 Modern, Part 2  
Wi Qtr. Arr. Prereq: 637.04.

637.07 Ballet, Part 2  
Wi Qtr. Arr. Prereq: Permission of instructor.

637.08 Modern, Part 3  
Sp Qtr. Arr. Prereq: 637.06.

637.09 Ballet, Part 3  
Sp Qtr. Arr. Prereq: Permission of instructor.

645 Foundations in Dance Composition I U G 1-5  
Au Qtr. Arr. Prereq: 111.03 or equiv. Open only to dance majors or by permission of instructor. Repeatable to a maximum of 12 cr hrs.

646 Foundations in Dance Composition II U G 1-5  
Wi Qtr. Arr. Prereq: 645. Open only to dance majors. Repeatable to a maximum of 12 cr hrs.

648 Music and Choreography U G 5  
Study of music suitable for choreographic purposes and the various approaches to the use of music in dance composition.
Sp Qtr. Arr. Prereq: 446 and Music 140 or 141.

651 Repertory U G 1-5  
Experience in learning a dance.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 214.08 or permission of instructor. Open only to dance majors. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

551.01 Existing Work  
551.02 New Work  

657 Dance in Diverse Cultures U G 3  
A multicultural investigation of the form and function of dance as a communal activity, functioning as ritual, art, and play.
Sp Qtr. Arr.

658 Early Ballet History U G 3  
Survey of the history of ballet from the Renaissance to the later part of the 18th century.
Au Qtr. Arr.

659 Ballet and Modern Dance History of the 19th and 20th Centuries U G 3  
Survey of dance from the late 18th century to the 1970's.
Wi Qtr. 4 cr.

670 Dance Fundamentals II U G 1-4  
An investigation of movement awareness principles and learning techniques (Alexander and Baltaff in particular) and their practical application to dance material.
Wi Qtr. Arr. Prereq: Jr standing and permission of instructor. Repeatable to a maximum of 4 cr hrs.

671 Kinesiology for Dance U G 3  
Exploration of the skeleton and muscles for mechanical efficiency in movement, including principles of stability and motion as they relate to dance.
Sp Qtr. 2 1/2-hr cl, 1 lab. Prereq: Jr standing and Zoology 235 recommended.

688 Resources for Dance Education U G 2  
Exploration of the use of musical accompaniment and motif writing as resources for teaching creative movement.
Wi Qtr. 2 1/2-hr cl. Prereq: Open to dance majors and other education students by permission of instructor. Repeatable to a maximum of 4 cr hrs.

687 Dance for Children U G 3-5  
Foundation for teaching dance to children.
Au Qtr. Arr. Not open to students with credit for 687.

687.01 Fundamentals of Children's Dance U G 5  
Wi Qtr. 3 1/2-hr cl. Prereq: 289.01 and 289.02, or permission of instructor.

687.02 Children's Dance in Educational Settings U G 3  
Sp Qtr. 3 1/2-hr cl. Prereq: 214.08 and 687.01, or permission of dance ed coordinator.

688 Methods and Materials of Teaching Modern Dance U G 3-5  
Foundations for teaching; laboratory problems, lectures, readings, and discussions.
Au Qtr. Arr. Prereq: 214.08 or permission of instructor.

689 Directed Teaching Experience in Dance U G 1-5  
Designed to aid prospective teachers of dance in their development of essential teaching skills in a variety of settings.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs.

691 Dance Practicum I U G 1-5  
Special applied projects for upper level dance majors.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

692 Workshop in Dance U G 1-15  
Concentrated study of dance and related areas; nature of workshop depends upon selected emphasis.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of workshop director. Repeatable to a maximum of 15 cr hrs.

693 Individual Studies in Dance U G 1-5  
Investigation of selected professional problems.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions for undergraduates and to a maximum of 30 cr hrs in any combination of decimal subdivisions for grad cr. These courses are graded S/U.

693.01 Choreography  
Prereq: 648. Open only to dance majors with written permission of adviser or chairperson.

693.02 Laban Studies  
Prereq: Written permission of dance adviser or chairperson.

693.03 Research  
Prereq: Written permission of dance adviser or chairperson. Open only to dance majors.

693.04 Production  
Prereq: Written permission of dance adviser or chairperson. Open only to dance majors.

693.05 Other  
Prereq: Permission of chairperson.

694 Group Studies U G 1-5  
Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs.

699 Dance Performance U G 1-5  
Su, Au, Wi, Sp Qtrs. 2 or more hrs of rehearsal weekly. Prereq: Permission of chairperson. Open only to dance majors; others by permission of chairperson. Each decimal subdivision repeatable to a maximum of 24 cr hrs. These courses are graded S/U.

699.04 Student Choreographic Projects  

699.06 Workshops  

749 Group Forms U G 3  
Composing group dances and exploring compositional devices and craft unique to group choreography.
Au Qtr. 3 1/2-hr cl. Prereq: 647 for grad students and 648 for undergraduates; or permission of instructor. Repeatable to a maximum of 6 cr hrs.

750 Choreography Workshop U G 1-5  
Choreographing and producing a dance in a performance setting.
Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 13 cr hrs.

759 Postmodernism in Dance U G 3 or 5  
An inquiry into aesthetic points of view, belief, and assumptions inherent in dance practices and dance criticism from the 1960's to the present.
Sp Qtr. 2 1/2-hr cl. Prereq: 161, 200, 257, or 659; or Arts Col 161; or Theatre 161; or permission of instructor.

H783 Honors Research U G 3-5  
A program of research and/or dance investigation for each student with individual conferences resulting in an honors thesis or honors project.
Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a major hr ratio of 3:5 in dance, permission of the instructor under whose supervision the work is to be completed, and the Honors Committee of either the College of the Arts or the College of Education. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

786 Student Teaching in Dance in Elementary Education U G 3-15  
Observation, participation, and teaching in a public school; seminars and individual conferences.
Au, Wi, Sp Qtrs. Arr. Prereq: 689 and permission of dance ed coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

787 Student Teaching in Dance in Secondary Education U G 3-15  
Observation, participation, and teaching in a public school; seminars and individual conferences.
Au, Wi, Sp Qtrs. Arr. Prereq: 689 and permission of dance ed coordinator. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

Dance 93
801 Seminar G 1-5
Not open to students with 15 cr hrs in 801. Each decimal subdivision repeatable to a maximum of 4 cr hrs.
801.21 Analysis of Choreographic Style G 1
Designed to introduce students to the examination of choreographic style.
801.22 Seminar in Body-Mind Approaches G 4
Introduction to body-mind practices as applied to dance; emphasis on Laban Movement Analysis.
801.31 Current Issues in Dance and Performance Art G 2
Discussion of current trends in dance and performance art in the context of contemporary issues in society and the arts.
801.51 Resources Seminar G 2
Designed to meet the needs of graduate students entering the MA and MFA degree programs in dance.
801.61 Teaching Associate Seminar G 1
Seminar designed specifically to meet the needs of students in the MA and MFA.
801.71 Performance Technique G 2
An interdisciplinary seminar exploring the creative and practical aspects of performance through exercises, readings, and discussion.
802 Choreographic Projects G 1-5
Advanced choreographic projects.
804 Elements of Dance II G 2
Wi Qtr.
805 Advanced Effort G 3
Continuation of 605 and 635.
806 Advanced Space Harmony G 3
Continuation of 606 and 636.
807 Foundations of Labanotation G 2
An examination of the spatial structure and dynamic rhythm of bodily movement in dance through the Laban framework.
810 Labanotation I G 4
Five-week study of Motif Writing/Description and five-week elementary course in Labanotation.
811 Labanotation II G 4
Continuation of 820.
812 Labanotation III G 4
Continuation of 821.
813 Labanotation IV G 3-5
Reading, analysis, and writing of complex movement ideas.
824 Directing from Score G 1-5
Teaching and coaching a dance learned from a Labanotated score.
845 Issues of Choreography I G 3
Investigation of the choreographic process; emphasis on the dynamics of movement.
846 Issues of Choreography II G 4
Continued investigation of the choreographic process; emphasis on structure.
847 Issues of Choreography III G 3
Continued investigation of the choreographic process; emphasis on choreographic invention, structure, and context.
879 University Dance Company G 1-5
The University Dance Company functions as a professional training ground for selected students; students assume major roles and responsibilities.
893 Individual Studies in Dance G 1-5
Investigation of selected professional problems.
894 Group Studies G 1-5
Advanced problems in dance; individual or group participation.
970 Master's Project G 1-30
Research and practical investigation of selected topics for purposes of the Plan B master's project.
999 Research in Dance G 1-5
Research for thesis purposes only.

Dental Hygiene

3082 Postle Hall, 305 West 12th Avenue, 292-2228

201 Oral Anatomy and Tooth Morphology U 4
Morphology and physiology of human teeth and surrounding structures.

223 Perio I
Wi Qtr. Prereq: 417.

223.01 Lecture U 3
Understanding of the periodontium in relation to the etiology of periodontal disease, the formation of deposits on teeth and the recognition, classification, and prevention of periodontal disease.

223.02 Laboratory U 4
Demonstration of the application of technical procedures for the removal of hard and soft deposits from the surfaces of the teeth, and function as a co-therapist in the prevention, recognition, and treatment of periodontal disease.

224 Perio II
Sp Qtr. Prereq: Basic psychology, and concur 224.02.
224.01 Lecture U 2
A study of patient management in the practice of dental hygiene to promote the achievement of personal and professional growth as an integral member of the dental health team.
2 cl. Prereq: Basic psych.
224.02 Clinic U 2
Clinical application of the principles and technical procedures taught in 223.6 cl hrs. Prereq: 223, 233, and 254 and Dent 545.

233 Oral Histology and Embryology U 2
A study of the microscopic anatomy of the teeth and surrounding structures; the development of the teeth, oral cavity, and face.
Wi Qtr. 2 cl. Prereq: Dent hyg 1st yr standing and basic biology; and concurs: anatomy.

240 Introduction to General Pathology U 2
An introduction to the basic principles of pathalogy and mechanisms of disease; the pathophysiology of common problems involving the various organ systems with emphasis on clinical manifestations.
Sp Qtr. 2 1-hr cl. Prereq: 233 and prereq or concurs: Zoology 292.

250 Restorative Dentistry I U 1
Introduction to the terminology and concepts of cariology and the use of effective preventive techniques.
Sp Qtr. 1 1-hr cl. Prereq: DH 201.

263 Oral Radiography U 2
The theory and technical procedures of oral radiography.
Wi Qtr. 2 cl. Prereq: DH 201 and soph standing.

264 Oral Radiography Laboratory U 1
Oral radiography for dental hygienists.
Wi Qtr. 3-hr lab. Prereq: DH 201 and soph standing; Dent 545 concur. Not open to students with credit for 263.

273 Dental Materials Laboratory U 2
A study of the composition, chemical and physical properties, manipulation, and uses of various materials employed in the practice of dentistry.
Sp Qtr. 2 3-hr lab. Prereq: Dent hyg 1st yr standing and Chem 102. Not open to students with credit for 372.

295 Introduction to Dental Hygiene U 1
Introduction to the historical, professional, legal, and ethical aspects of dental hygiene.
Au Qtr. 1 cl. Prereq: Dent hyg soph standing.

301 Pain Control U 1
The role of the dental hygienist as an assistant in anesthesia; premedication; psychological responses to and pharmacological actions of anesthetic agents; emergency treatment.
Wi Qtr. 1 cl or 3 lab hrs. Prereq: 321 and 331, and CBNA 199 or Zoology 235.

321 Perio III
Au Qtr. Prereq: 224.01, 224.02, 240, and 273.
321.01 Lecture U 2
Philosophy and techniques of prevention of periodontal disease.
2 cl. Prereq: 224.01, 224.02, 240, and 273.

321.02 Clinic U 4
Clinical application of principles taught in 223.12 hrs. clinical. Prereq: 224.01, 224.02, 237, 240, and 273.

322 Perio IV
Wi Qtr. Prereq: 321, 330, 331, and 341; and DH 330.
322.01 Lecture U 1
A continuation of 321.01; prepares students to provide appropriate preventive and therapeutic services necessary for the prevention of periodontal diseases within the concept of periodontal maintenance therapy. 1 cl.
322.02 Clinic U 3
A continuation of 321.02. 9 hrs. clinic.

323 Perio V
Sp Qtr. Prereq: 322.1
323.01 Lecture U 1
A continuation of 322.01; expands content and experience in periodontology and promotes analytical skills in assessment and in dental hygiene treatment planning for patients. 1 cl.

323.02 Clinic U 3
A continuation of 322.02.

330 Care for Patients with Special Needs U 2
Development of background to facilitate recognition of the special needs of patient and techniques in dental hygiene care for this population.
Sp Qtr. 1 2-hr cl. Prereq: Dent hyg 1st yr standing or permission of instructor.

331 Pharmacology U 3
A study of pharmacology including the biochemical basis of drugs used in dentistry which have implications for patients and the application of pharmacological agents for specific usage.
Au Qtr. 3 cl. Prereq: 223.01, 240, and Zoology 232.

338 Pediatric Dentistry U 2
Lectures, laboratory, and clinical exercises to prepare students to provide for the pediatric patient.
Au Qtr. 1 cl. 2 lab hrs. Prereq: Jr standing.

341 Introduction to Oral Diagnosis and Oral Pathology U 2
Introduction to the diagnostic process; pathogenesis, and symptomatology and treatment of oral disease.
Au Qtr. 2 cl. Prereq: 240.

351 Restorative Dentistry II U 5
Theory and technical procedures in restoration with compound cavity preparations (amalgam alloyfilled resins) and procedures utilized by advanced qualified personnel in basic and advanced restorative dentistry.
Su Qtr. 3 cl, 6 lab hrs. Prereq: Successful completion of 320.

352 Expanded Functions Clinic I U 2
Clinical application of expanded function duties permitted by law.
Su Qtr. 6 clinic hrs. Prereq or concurs: 351.

362 Assessment and Management of the Geriatric Patient U 1
Fosters an understanding of the special considerations needed to provide dental care to geriatric patients; requires extensive knowledge of the total patient situation.
Sp Qtr. 1 cl. Prereq: Dent hyg Jr standing.

373 Dental Materials for Dental Hygienists U 2
A study of the composition, chemical and physical properties, manipulation, and various materials employed in the practice of dentistry.
Sp Qtr. 1 2-hr cl. Prereq: 273.

380 Community Dental Health U 2
Development of the knowledge, attitudes, skills and behaviors necessary to promote dental health and prevent dental disease through organized community efforts.
Au Qtr. 2 cl. Prereq: 265. Not open to students with credit for 381 and 382.

383 Introduction to Research and Statistical Methods U 5
Methods utilized in community health research, including study design, sampling, data collection, and the use of statistical tools in the interpretation of quantitative data.
Wi Qtr. 4 1-hr cl, 1 2-hr recitation, or microcomputer lab. Prereq: Dent hyg Jr standing. GEC course.

384 Dental Hygiene Care for the Mentally Retarded and Developmentally Disabled U 1-5
Various handicapping conditions and any oral manifestations; management techniques and practice in a clinical setting; comprehensive on-going follow-up in the group home setting.
Au Qtr. Sp Qtr. 1 cl and arr. Prereq: 223, dent hyg 2nd yr standing, and permission of instructor.

401 Dental Practice Economics, Management and Employment Issues U 3
Economic and management concepts of dental practice settings; utilization of management skills in high quality dental hygiene care; preparation for employment and career management.
Au Qtr. 1 1/2-cl hrs. Prereq: Dent hyg Jr standing. Not open to students with credit for 403 and 413.

410 Occlusion U 1
The goal of this course is to prepare dental hygiene students to collect and record all pertinent information related to the patient's occlusion.
Wi Qtr. 10 3-hr lab/clinic sessions. Prereq: Sr standing in Dental Hygiene.

411 Perio VI
Au Qtr.
411.01 Lecture U 2
A continuation of 323.01; includes the evaluation of results of dental hygiene therapy and a review of the literature. 3-hr cl. Prereq: 323 and enrollment in dent hyg program.
Dental Hygiene

411.08 Clinic U 3
A continuation of 323.02 for dental hygiene students.
9 hrs clinical. Prereq: 323 and enrollment in dent hyg program.

412 Perio VII
Wi Qtr.
412.01 Lecture U 1
A continuation of 411.01 and addition of planning, implementing, and evaluating a research project.
1 cl. Prereq: 411 and enrollment in dent hyg.
412.02 Clinic U 3
A continuation of 411.02.
9 hr clinic. Prereq: 411.

420 Oral Radiography and Interpretation U 1
Interpretation of radiographic normal anatomic structures and pathologic entities; radiation hygiene.
Au Qtr. 1 cl. Prereq: 265 or Dent 545 and dent hyg 264, dent hyg sr standing. Not open to students with credit for 320.

450 Expanded Functions Clinic II U 2
A continuation of 352.
Au Qtr. 6 clinic hrs. Prereq: 352.

451 Expanded Functions Clinic III U 2
A continuation of 450.
Wi Qtr. 6 clinic hrs. Prereq: 450.

452 Expanded Functions Seminar U 2
Seminar on current expanded functions practice management techniques and current law in Ohio including practical experiences in preparation for Ohio Expanded Functions Qualifying Examination.
Sp Qtr. 1 cl, 1 2-hr lab. Prereq: 451.

485 Current Concepts in the Practice of Dental Hygiene U 2
Seminar designed to assist students with legal, ethical, and philosophical concerns of the dental hygienist as a contemporary health care professional.
Sp Qtr. 2 hrs lecture. Prereq: 3rd yr standing in BSDH program. GEC course.

486 Practicum in Dental Hygiene U 2-6
Supervised practice outside the traditional clinic in a setting similar to the one in which the dental hygiene student may practice, teach, or conduct research upon graduation.
Su, Au, Wi, Sp Qtrs. Sr Prereq: Sr standing in dent hyg. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

488 Senior Seminar U 1
Focus on the current body of dental hygiene knowledge and the relevance to dental hygiene practice.
Au Qtr. 1 cl. Prereq: Graduating yr standing.

521 Inquiry into Periodontal Care Issues U 2 or 3
Advanced periodontics; affords students the opportunity to become involved in data collection for longitudinal research studies in clinical periodontics.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 412 or equiv and sr standing in dent hyg or RDH grad level. Enrollment by permission; selection will be based on student's clinical and didactic performance. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

583 Individual Studies in Dental Hygiene U G 1-15
Advanced studies in any relevant area of dental hygiene. Staff.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

584 Group Studies in Dental Hygiene U G 1-5
Group studies in special dental hygiene areas. Staff.

Dentistry

1159 Postle Hall, 305 West 12th Avenue, 202-2401

The P mark is used in a designated series or sequence of clinical courses where the mark A, B, C, D, or E is not recorded until the final course of the series or sequence is completed. The P mark indicates that the total sequence has not been completed and authorizes the student to progress into the next consecutive course of that particular series or sequence. This mark of itself indicates neither satisfactory performance or unsatisfactory performance. When a final mark is submitted by the instructor, all previous P marks shall assume and be recorded with the value of the final mark. Until such time as a final mark is recorded, the mark of P shall be given and the credit shall be counted as hours only, and shall not be considered in determining a student's point-hour ratio.

411 Microbiology PG 5
Medical microbiology and its clinical application. Topics include medically-important microorganisms presented in an integrative organ systems approach.
Au Qtr. 40 lec, 10 lab. Prereq: Dent 2nd yr standing.

412 Immunology PG 3
Basic immunology and clinical application with focus on tissues and cells of immune response, genetics of immunity and regulation of immune responses.
Au Qtr. 22 lec, 8 lab. Prereq: Dent 2nd yr standing.

417 Oral Anatomy P 3
Anatomy of the oral region, dental morphology with laboratory experience.
Au Qtr. 2 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

421 Community Dentistry P 1
History of dentistry; principles of epidemiology, particularly disease of the oral cavity; demographics of oral diseases; and disease prevention procedures from a community standpoint.
Au Qtr. 1 cl. Prereq: Dent 1st yr standing.

422 Community Dentistry P 2
Preventive dentistry and patient education; patient motivation and learning; and nutrition and exercise.
Sp Qtr. 2 cl. Prereq: Dent 1st yr standing.

423 Clinical Evaluative Sciences I P 2
Introduction to clinical evaluative sciences. Use of evidence in decision making and applying critical thinking based on objective criteria to the evaluation of clinical practice.
Wi Qtr. 2 cl. Prereq: Dent 1st yr standing.

424 Clinical Evaluative Sciences II P 2
Methodological and diagnostic tools applicable to evaluation of oral health care for populations and individual patients. Use of systematic measures for quantifying care quality.
Sp Qtr. 2 cl. Prereq: Dent 1st yr standing.

425 Introduction to Practice Management P 1
Introduction to basic concepts of finance and business management as related to dental practice management.
Au Qtr. 1 cl.

430 Restorative Dentistry P 3
Overview of disease processes and procedures performed by general dentists and factors that determine appropriate treatment.
Au Qtr. 2 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

432 Restorative Dentistry P 3
Principles and techniques for inlay, MOD onlay, and complete veneer crown preparation.
Wi Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

433 Restorative Dentistry P 2
Introduction to occlusion, emphasizing form and function; the occlusal role of posterior teeth in mandibular movement is stressed; includes waxing exercises.
Wi Qtr. 1 cl, 3 lab hrs. Prereq: Dent 1st yr standing.

434 Restorative Dentistry P 3
Continuation of 432.
Sp Qtr. 1 cl, 6 lab hrs. Prereq: Dent 1st yr standing.

482 Removable Complete Prosthodontics P 1
Fabrication of complete dentures; impression making, cast mounting, arranging artificial teeth, processing acrylic resin and finishing, polishing, and completing dentures.
Prereq: Dent 2nd yr standing.

482.01 Lecture
Au Qtr.

482.02 Laboratory
Laboratory for 482.01.
Wi Qtr. 4 lab hrs.

489 Removable Partial Prosthodontics P 1
Prereq: Dent 2nd yr standing.

489.01 Lecture
An introduction to the principles of design and construction of removable partial dentures.
Wi Qtr. 1 cl.

489.02 Laboratory
Wi Qtr. 4 lab hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Description</th>
<th>Prereq.</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>514</td>
<td>Oral Anatomy P C G 3</td>
<td>Oral embryology and histology of teeth and surrounding structures and their correlation to the practice of dentistry.</td>
<td>S. Qtr. 3 cl.</td>
<td>Dent 1st yr standing.</td>
</tr>
<tr>
<td>516</td>
<td>Oral Microbiology P 2</td>
<td>Microbiology of the oral cavity and its relationship to caries, pulpal and periodontal diseases.</td>
<td>S. Qtr. 2 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>518</td>
<td>Oral Physiology P 2</td>
<td>Physiology of the sensory, motor and glandular functions of the oral region.</td>
<td>S. Qtr. 2 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>521</td>
<td>Behavioral Factors in Dentistry P 1</td>
<td>Examination of the principles and dynamics of human behavior with emphasis on sociopsychosocial components of dentist-patient relationships and their consequences for dental practice.</td>
<td>A. Qtr. 1 cl.</td>
<td>Dent 1st yr standing.</td>
</tr>
<tr>
<td>522</td>
<td>Clinical Geriatric Dentistry P 1</td>
<td>Delivery of clinical dental care to elderly populations at nursing homes and geriatric clinics.</td>
<td>Su, Au, Wi, Sp. Qtrs. 1 day per week.</td>
<td></td>
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<tr>
<td>524</td>
<td>Clinical Evaluative Sciences III P 2</td>
<td>Use of research methods and statistics for evaluating scientific literature and practice decisions.</td>
<td>A. Qtr. 2 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>531</td>
<td>Restorative Dentistry P 2</td>
<td>Theory, principles, and procedures for tooth preparations to receive posterior metal ceramic crowns; includes the fabrication of a metal ceramic fixed partial denture.</td>
<td>A. Qtr. 1 cl.</td>
<td>3 lab hrs. Dent 2nd yr standing.</td>
</tr>
<tr>
<td>532</td>
<td>Restorative Dentistry P 2</td>
<td>Functional and cosmetic aspects of anterior teeth; continuing the study of mandibular movement.</td>
<td>S. Qtr. 1 cl.</td>
<td>3 lab hrs. Dent 1st yr standing.</td>
</tr>
<tr>
<td>533</td>
<td>Restorative Dentistry P 2</td>
<td>Restoration of posterior teeth using composite resin, amalgam, and glass ionomer materials.</td>
<td>W. Qtr. 1 cl.</td>
<td>3 lab hrs. Dent 1st yr standing.</td>
</tr>
<tr>
<td>534</td>
<td>Restorative Dentistry P 2</td>
<td>Contemporary aesthetic dental treatments; aesthetic restorative materials and methods in operative dentistry.</td>
<td>Sp. Qtr. 1 cl.</td>
<td>3 lab hrs. Dent 1st yr standing.</td>
</tr>
<tr>
<td>535</td>
<td>Restorative Dentistry P 3</td>
<td>Theory, principles, and techniques for anterior tooth preparations to receive aesthetic crowns and fixed partial dentures.</td>
<td>W. Qtr. 1 cl.</td>
<td>6 lab hrs. Dent 2nd yr standing.</td>
</tr>
<tr>
<td>536</td>
<td>Restorative Dentistry P 3</td>
<td>Theory and techniques for fabricating correctly contoured provisional restorations; cast post/cap, porcelain application and customizing (contouring, staining, and glazing).</td>
<td>S. Qtr. 1 cl.</td>
<td>3 lab hrs. Dent 2nd yr standing.</td>
</tr>
<tr>
<td>536.01</td>
<td>Restorative Dentistry P 2</td>
<td>Theory and technique for the restoration of endodontically treated teeth.</td>
<td>W. Qtr. 4 lecture/lab hrs.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>536.02</td>
<td>Restorative Dentistry P 2</td>
<td>Theory and technique for fabricating metal and ceramic restorations.</td>
<td>S. Qtr. 3 lecture/lab hrs.</td>
<td>Dent 3rd yr standing.</td>
</tr>
<tr>
<td>537</td>
<td>Restorative Dentistry P 2</td>
<td>Theory, principles, and techniques for restoring atypically damaged single teeth with directly placed and cast materials.</td>
<td>S. Qtr. 1 cl.</td>
<td>3 lab hrs. Dent 2nd yr standing.</td>
</tr>
<tr>
<td>538</td>
<td>Restorative Dentistry P 2</td>
<td>Complex esthetic restorations, diagnosis, treatment planning and care delivery including diastema closures, resin and porcelain veneers, ceramic and composite inlays, intracoronal restorations, onlays.</td>
<td>Au. Qtr. Prereq.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>545</td>
<td>Diagnostic Sciences I P 2</td>
<td>Dental patient evaluation that identifies dental and pertinent medical problems including head, neck, and oral cavity examinations; managing lab tests, and radiographs and diagnosis.</td>
<td>W. Qtr. 2 cl.</td>
<td>Dent 2nd yr standing. Not open to students with credit for 547.</td>
</tr>
<tr>
<td>548</td>
<td>Diagnostic Sciences II P 3</td>
<td>Oral diagnosis, radiology, and pathology: radiographic techniques and interpretation; clinical appearance and diagnosis of normal and non-normal oral anatomy.</td>
<td>Sp. Qtr. 3 cl.</td>
<td>Dent 2nd yr standing. Not open to students with credit for 546.</td>
</tr>
<tr>
<td>551</td>
<td>Pediatric Dentistry P 2</td>
<td>Introduction to pediatric dentistry emphasizing prevention, diagnosis and treatment of dental caries and pulp therapy. Laboratory techniques required for sealants, restorations and pulpotomy.</td>
<td>S. Qtr. 1 cl.</td>
<td>4 lab hrs. Dent 3rd yr standing.</td>
</tr>
<tr>
<td>556</td>
<td>Orthodontics P 1</td>
<td>An introduction to craniofacial growth and development with applications toward orthodontic care.</td>
<td>W. Qtr. 1 cl.</td>
<td>Dent 1st yr standing.</td>
</tr>
<tr>
<td>556</td>
<td>Periodontology P 3</td>
<td>Diagnosis etiology and activity of periodontal diseases; biology and pathophysiology of the disease process.</td>
<td>W. Qtr. 3 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>557</td>
<td>Endodontics P 1</td>
<td>Basic techniques and procedures used in the treatment of pulpless teeth.</td>
<td>A. Qtr. 1 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>558</td>
<td>Endodontics P 1</td>
<td>Laboratory experience in endodontics.</td>
<td>W. Qtr. 16 lab hrs for 1 wk.</td>
<td>Dent 2nd yr standing. This course is graded S/U.</td>
</tr>
<tr>
<td>559</td>
<td>Endodontics P 1</td>
<td>The rationale and prognosis of endodontic procedures; application of treatment techniques peculiar to endodontics, including radiography, intracanal preparations, and root fillings.</td>
<td>Sp. Qtr. 1 cl.</td>
<td>Dent 3rd yr standing.</td>
</tr>
<tr>
<td>571</td>
<td>Pharmacology P 1</td>
<td>Introductory pharmacology including pharmacodynamics, pharmacokinetics, pharmacotherapeutics, neuromuscular blocking drugs, anti-diabetic agents, hormones, local anesthetics, drug regulations, proscription writing, and drug abuse.</td>
<td>Au. Qtr. 1 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>572</td>
<td>Pharmacology P 1</td>
<td>Autonomic pharmacology including cholinergics, anti-cholinergics, adrenergics, anti-adrenergics, and respiratory drugs; anti-inflammatory drugs, narcotic, and non-narcotic analgesics.</td>
<td>W. Qtr. 1 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>579</td>
<td>Local Anesthesiology P 1</td>
<td>The theory, chemistry, and techniques of local anesthesia for dental procedures.</td>
<td>Sp. Qtr. 1 cl.</td>
<td>Dent 2nd yr standing.</td>
</tr>
<tr>
<td>583</td>
<td>Removable Complete Prosthodontics P 1</td>
<td>The clinical implications of complete denture construction.</td>
<td>S. Qtr. 1 cl.</td>
<td>Dent 3rd yr standing.</td>
</tr>
<tr>
<td>584</td>
<td>Removable Partial Prosthodontics P 1</td>
<td>Prereq: Dent 2nd yr standing.</td>
<td>S. Qtr. 4 cl.</td>
<td>4 lab hrs.</td>
</tr>
</tbody>
</table>
589 Removable Partial Prosthodontics P 1
The advanced principles and design of removable partial dentures and their clinical applications.
Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

593 Individual Studies P 1-12
Individual studies in any of the recognized fields of dentistry.
Su, Au, Wi, Sp Qtrs. Repeatable. This course is letter graded.

601 Clinical Oral Surgery P 2
Evaluation, diagnosis, treatment planning, surgery, and post-operative management of patients in clinic.
Sp Qtr. 4 clin hrs/credit hr. Prereq: Dent 3rd yr standing.

603 Oral Surgery P 1
Overview of non-dental pain in head and face emphasizing temporomandibular disorders. Includes pain neurophysiology, management principles, working diagnosis and initial management or referral.
Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

616 Clinical Primary Care Dentistry P 7
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Su Qtr. 4 clin hrs/credit hr. Prereq: Dent 3rd yr standing.

617 Clinical Primary Care Dentistry P 8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Au Qtr. 4 clin hrs/credit hr. Prereq: Dent 3rd yr standing.

618 Clinical Primary Care Dentistry P 8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Wi Qtr. 4 clin hrs/credit hr. Prereq: Dent 3rd yr standing.

619 Clinical Primary Care Dentistry P 8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Sp Qtr. 4 clin hrs/credit hr. Prereq: Dent 3rd yr standing.

620 Orientation to Clinical Dentistry P 1-10
Intersdisiplinary orientation and direct guidance to clinical practice including clinical policies; procedures; time, patient, and treatment management through individual conferences, classroom presentations, and clinical practice.
Su, Au, Wi, Sp Qtrs. Prereq: Dent 3rd yr standing. Repeatable to a maximum of 18 cr hrs.

621 Dental Ethics P 1
Advanced study and critical analysis of the ethical issues associated with the day to day practice of the profession.
Au, Wi, Sp Qtrs. 3-4 hr cl. Prereq: Dent 3rd yr standing.

623 Community Dentistry P 1
Dental care for the special-needs patient; understanding of the total patient situation, mobility, psychosocial, medical issues, and interpersonal relations.
Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

625 Practice Management I P 1
Dental practice planning and development. Personnel, time and information management.
Au Qtr. 1 cl.

626 Practice Management II P 1
Accounting and financial planning as related to dental practice management.
Sp Qtr. 1 cl.

627 Practice Management III P 1
Legal issues related to dental practice management. Practice purchase and associationships.
Su Qtr. 1 cl.

630 Restorative Dentistry P 2
Techniques for collecting information necessary to diagnose accurately and plan complex prosthodontic care; integrates theory into clinical practice.
Sp Qtr. 1 cl, 3 lab clinic hrs. Prereq: Dent 2nd yr standing.

631 Restorative Dentistry P 2
Restorative clinical requirements and procedures plus information on tooth isolation, pulp vitality, laboratory prescriptions and protocols, and pulp evaluation to restorative procedures.
Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

632 Restorative Dentistry P 1
Comprehensive diagnosis and treatment planning for restorative and prosthodontic dentistry.
Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

633 Restorative Dentistry P 1
Clinically applied principles for restorative and fixed prosthodontics; includes fluid control, soft-tissue management, electrosurgery, posts and cores, crowns, and fixed partial dentures.
Wi Qtr. 1 cl. Prereq: Dent 3rd yr standing.

634 Restorative Dentistry P 1
Complex prosthodontic treatment considerations; presents treatment considerations for patients with temporomandibular disorders, removable partial dentures, and worn dentitions.
Sp Qtr. 1 cl. Prereq: Dent 3rd yr standing.

638 Restorative Dentistry P 1
This course will enable the participant to recognize the need to restore anterior utilizing contemporary dental implants.
Au Qtr. 1 cl per week plus 15 total arranged lab clinical hrs. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the College of Dentistry may be used.

639 Clinical Implant Dentistry P 1
Introductory laboratory and clinical experiences in contemporary surgical and restorative implant dentistry.
Sp Qtr. 16 clinical hrs total. Prereq: 638. This course is graded S/U.

645 Diagnostic Sciences III P 2
Provides technology, pathogenesis, clinical and microscopic features, and management of mucocutaneous disorders, microbial disease, reactive lesions, AIDS and salivary gland disease.
Su Qtr. 2 cl. Prereq: Dent 3rd yr standing. Not open to students with credit for 542.

648 Diagnostic Sciences IV P 2
Oral pathology: study of clinical appearance, epidemiology, etiology, diagnosis, and histopathology of common and rare lesions of oral hard and soft tissues.
Au Qtr. 2 cl. Prereq: 514, Path 655, and Dent 3rd yr standing. Not open to students with credit for 543.

651 Pediatric Dentistry
651.01 Pediatric Dentistry Lecture P 3
Treatment planning for pediatric dentistry. Includes discussion of child development, behavioral management, developmental disabilities, space maintenance, periodontal conditions, trauma.
Au Qtr. 3 cl. Prereq: Dent 3rd yr standing and 551.

652 Pediatric Dentistry
652.02 Clinical Pediatric Dentistry P 1
Clinical series continued in 653; may include rotation at Nisonger Center.
Wi Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. A 'P' mark as defined by the College of Dentistry may be used.

653 Clinical Pediatric Dentistry P 1
Continuation of 652.02; clinic may include rotation at Nisonger Center.
Sp Qtr. 4 clinic hrs. Prereq: 652.02. A 'P' mark as defined by the College of Dentistry may be used. This is the final course in the series.

654 Orthodontics P 1
Introduction to diagnosis of orthodontic conditions and recognizing potential orthodontic problems. Overview of the treatment planning process.
Sp Qtr. 1 cl. Prereq: Dent 1st yr standing.

655 Orthodontics P 1
Sequencing and stages of the orthodontic treatment process. Special emphasis on limited and adjutant orthodontic procedures.
Au Qtr. 1 cl. Prereq: Dent 2nd yr standing.

656 Orthodontics P 1
Adjunctive and comprehensive orthodontic treatment in adults; biology and mechanics of tooth movement, preprosthetic treatment, surgical treatment, plus retention.
Wi Qtr. 1 cl. Prereq: Dent 2nd yr standing.

657 Orthodontic Technique P 2
Laboratory/cclinical technique involving diagnostic, treatment planning, and biomechanical aspects of orthodontic care.
Sp Qtr. 1 cl, 3 lab hrs. Prereq: Dent 2nd yr standing.

658 Clinical Orthodontics I P 3
Clinical orthodontic course entailing the provision of limited tooth movement.
Sp Qtr. Prereq: Dent 3rd yr standing. This course is graded S/U.
659 Orthodontics P 1
Prereq: Dent 4th yr standing.
659.01 Orthodontic Literature Review
Orthodontic clinical literature review.
Au Qtr. 1 cl. This course is offered in a sequence with 659.02.
659.02 Orthodontic Case Presentation
Students present completed orthodontic treatment cases in a seminar setting.
Wi Qtr. 1 cl. Offered in a sequence with 659.01, this is the final course of the series.

664 Periodontology P 2
Advanced treatment modalities for the management of periodontal diseases with emphasis on surgical corrective techniques; current developments in clinical periodontics.
Su Qtr. 2 cl. Prereq: Dent 3rd yr standing.

666 Clinical Periodontology P 1
Periodontology clinical diagnostic exam and dental prophylaxis (scaling) exam.
Sp Qtr. Arr. Prereq: Dent 3rd yr standing.

668 Clinical Endodontics I P 1
Clinic.
Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing. This course is offered in a series with 669. A P* mark as defined by the College of Dentistry may be used.

669 Clinical Endodontics II P 2
A continuation of 668.
Sp Qtr. 4 clinic hrs. Prereq: Dent 3rd yr standing. This course is offered in a series with 668. This is the final course of the series. A P* mark as defined by the College of Dentistry may be used.

672 Pharmacology P 1
Review of autonomic pharmacology, psychopharmacology including antipsychotics and antidepressants, anti-Parkinson's therapy, and the principles, mechanisms, classifications, uses of antibiotic, and chemotherapeutic agents.
Au Qtr. 1 cl. Prereq: Dent 3rd yr standing.

684 Removable Complete Prosthodontics P 3
Block assignment of integrated didactic, laboratory, and clinical removable prosthetic instruction. Laboratory competency examination of Dent III students' ability to provide complete prosthodontic treatment.
Su Qtr. 36-hr. block. Prereq: Dent 3rd yr standing.

693 Individual Studies in Dentistry PG 1-12
Individual studies in any of the recognized fields of dentistry.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable. This course is graded S/U.

700 Special Problems PG 1-15
700.01 Advanced Oral Surgery and Anesthesia
Diagnosis and treatment of surgical conditions of the teeth and contiguous structures; advanced techniques in surgery and local and general anesthesia.

700.02 Advanced Orthodontics
Applied orthodontics and myology in cephalometric roentgenographic interpretations; review of cephalic growth and development factors in normal occlusion; correction of malocclusions and dento-facial malformations.

700.03 Advanced Periodontics
Diagnosis and treatment of periodontal diseases; correlation between the disease of the periodontium and probable systemic diseases, and management of diseases of a purely dental origin.

700.04 Advanced Prosthodontics
The diagnosis, treatment, and replacement of missing or lost teeth and parts of the mouth by prosthetic appliances; complete removable partial or fixed restorations.

700.05 Advanced Oral Pathology and Diagnosis
The interrelationships of oral and general pathology; current advances in the field of oral pathology and diagnosis.

700.06 Advanced Endodontics
The diagnosis of pulp and periradicular diseases and their treatment by surgical and nonsurgical techniques.

700.07 Advanced Pedodontics
Lectures, seminars, and clinical practice encompassing all phases of pedodontics and interceptive orthodontics.

700.08 Advanced Dental Materials
The science of dental materials.

700.09 Advanced Oral Histology and Embryology
The principles of histology and embryology applied to the structures in the oral region—their development, morphology, functions, and clinical relationships.

700.10 Advanced Operative Dentistry
Clinical problems in operative dentistry and their correlation with problems in related fields of dentistry; special emphasis on preventive dentistry.

701 Advanced Clinical Oral Maxillofacial Surgery P 8
Clinical experience in removal of teeth, biopsy, minor preprosthetic, and post operative patient care.
Su, Au, Wi Qtrs. 60 clinic hour block. This course is graded S/U. Prereq: Dent 4th yr standing.

704 Advanced Oral and Maxillofacial Surgery P 2
Areas of oral and maxillofacial surgeries; dentofacial deformities; trauma; reconstructive surgery; cysts and tumors; TUM; head and neck infections; and advanced dento-alveolar surgery techniques.
Au Qtr. 2 cl. Prereq: Dent 4th yr standing.

708 Hospital Dentistry
Defines the role of the hospital in the treatment of dental patients and provides experience in the hospital so the dentist can contribute to total patient care.
Su, Au, Wi, Sp Qtrs. 1 week. Prereq: Dent 3rd yr standing.

708.02 Clinic: University Hospital P 1
In-patient and non-patient general anesthesia, operating room, emergency room, out-patient dentistry, clinics, hospital pathology service, medicine and surgery conferences, ward rounds, laboratory services, oral surgery rounds.
Su, Au, Wi, Sp Qtrs. 1-4 hr clinic.

708.03 Clinic: Children's Hospital P 1
Operating room, emergency room, out-patient dentistry, out-patient clinics, observation in general anesthesia, medical and surgical conferences, ward rounds, laboratory services.
Su, Au, Wi, Sp Qtrs. 1-4 hr clinic.

716 Clinical Primary Care Dentistry P 8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Su Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

717 Clinical Primary Care Dentistry P 8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Au Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

718 Clinical Primary Care Dentistry P 8
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Wi Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

719 Clinical Primary Care Dentistry P 12
Clinical experience in primary care dentistry including diagnosis, prognosis, treatment planning, care delivery and evaluation.
Sp Qtr. 4 clinic hrs/credit hr. Prereq: Dent 4th yr standing.

720 Advanced Clinical Dentistry P 1-12
Interdisciplinary orientation and direct guidance to clinical practice including clinical policies, procedures, time, patient, and treatment management through individual conferences, classroom presentations, and clinical practice.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Dent 4th yr standing. Repeatable to a maximum of 30 or hrs.

730 Restorative Dentistry P 2
Restorative and prosthetic concepts focusing on information essential to successful general practice including that sought by National Board and Regional licensing authorities.
Au Qtr. 2 cl. Prereq: Dent 4th yr standing.

734 Clinical Restorative Dentistry P 2
Clinical competency examinations; examinations of senior students' ability to perform efficiently, high quality routine dentistry.
Wi Qtr. 2 hrs clinical. Prereq: Dent 4th yr standing.

742 Oral Pathology PG 1
A review of common oral lesions with emphasis on cause, clinical appearance, signs, symptoms, diagnosis, treatment and management.
Au Qtr. 1 cl. Prereq: Dent 4th yr standing.

744 Clinical Oral Pathology P 2
Review of common oral and paranasal diseases, with emphasis on clinical aspects, diagnosis, and management of various lesions.
Su Qtr. 1-2 hr. Prereq: Dent 4th yr standing.

747 Clinical Oral Radiology I P 1
Au Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

748 Clinical Oral Radiology II P 1
A continuation of 747.
Wi Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.
749 Clinical Oral Radiology III P 1
A continuation of 748. 
Sp Qtr. 2 clinic hrs. Prereq: Dent 3rd yr standing.

751 Clinical Pediatric Dentistry P 1
Clinical series with 752; course may include rotation at Nisonger Center. 
Su Qtr. 4 hrs clinic. Prereq: Dent 4th yr standing. A "P" mark as defined by the College of Dentistry may be used.

752 Clinical Pediatric Dentistry P 1
Continuation of 751; course may include rotation at Nisonger Center. 
Au Qtr. 4 hrs clinic. Prereq: 751. A "P" mark as defined by the College of Dentistry may be used. This is the final course in the series.

756 Orthodontics Treatment Planning Skills P 1
Diagnosis and treatment-planning instruction/analysis to promote integration of pediatric dentistry, orthodontics, periodontics, and prosthetics. 
Su Qtr. 1 cl. Prereq: Dent 3rd yr standing.

758 Clinical Orthodontics II P 3
Clinical orthodontic course entailing the provision of limited tooth movement. 
Wi Qtr. 6 hrs clinical. Prereq: Dent 4th yr standing. This course is graded S/U.

768 Clinical Endodontics III P 2
Clinic. 
Au Qtr. 4 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 769. A "P" mark as defined by the College of Dentistry may be used.

769 Clinical Endodontics IV P 1
A continuation of 768. 
Wi Qtr. 2 clinic hrs. Prereq: Dent 4th yr standing. This course is offered in a series with 768. This is the final course of the series. A "P" mark as defined by the College of Dentistry may be used.

771 Pharmacology P 1
Pharmacology of drugs used primarily for medical conditions including cardiac glycosides, anti-arrhythmics, calcium channel blockers, anti-anginals, anti-hypertensives, anti-coagulants, anti-neoplastics, and gastrointestinal medications. 
Su Qtr. 1 cl. Prereq: Dent 4th yr standing.

776 Clinical Periodontology P 1
Periodontology written periodontal exam and clinical exam of diagnostic findings, scaling and root planing. 
Au Qtr. Arr. Prereq: Dent 4th yr standing.

777 Clinical Periodontology P 1
Periodontology clinical examination, NE Regional Dental Board format. 
Wi Qtr. Arr. Prereq: Dent 4th yr standing.

778 Anxiety and Pain Control P 2
Principles of anxiety control by sedative techniques with nitrous oxide-oxygen conscious sedation and with oral I.M. or I.V. light conscious sedation; methods of pre-operative assessment, monitoring, and management of complications; a review of light sedation, deep sedation, and general anesthesia. 
Wi Qtr. 2 cl. Prereq: Dent 3rd yr standing.

785 Removable Complete Prosthodontics P 2
Clinical competency examination; examination of Dent IV students' ability to provide removable complete prosthetic treatment. 
Wi Qtr. 6 clinic hrs. Prereq: Dent 4th yr standing.

789 Experiential Education in Dentistry P 0
Advanced clinical patient care. 
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Graduating 4th yr or other dental student with special permission. Repeatable. This course is graded S/U.

790 Advanced Dental Topics or Problems P 1-6
Lectures and discussions of current topics, laboratory or clinical participation in problems or investigations related to dentistry. Presented by faculty, guest lecturers or clinicians. 
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Open only to dent students who meet college stated prerequisites and who have permission of the college office and instructor. Maximum number of cr hrs course may be repeated varies with student's standing and according to criteria established by college. These courses are graded S/U.

790.01 Community Dentistry
790.02 Community Dentistry
790.03 Community Dentistry
790.04 Community Dentistry
790.05 Community Dentistry
790.06 Community Dentistry
790.07 Community Dentistry
790.08 Fixed Prosthodontics
790.09 Fixed Prosthodontics
790.10 Fixed Prosthodontics
790.11 Fixed Prosthodontics
790.12 Fixed Prosthodontics
790.13 Fixed Prosthodontics
790.14 Fixed Prosthodontics
790.15 Endodontics
790.16 Endodontics
790.17 Endodontics
790.18 Endodontics
790.19 Endodontics
790.20 Endodontics
790.21 Endodontics
790.22 Operative Dentistry
790.23 Operative Dentistry
790.24 Operative Dentistry
790.25 Operative Dentistry
790.26 Operative Dentistry
790.27 Operative Dentistry
790.28 Operative Dentistry
790.29 Oral Biology
790.30 Oral Biology
790.31 Oral Biology
790.32 Oral Biology
790.33 Oral Biology
790.34 Oral Biology
790.35 Oral Biology
790.36 Oral Diagnosis and Medicine
790.37 Oral Diagnosis and Medicine
790.38 Oral Diagnosis and Medicine
790.39 Oral Diagnosis and Medicine
790.40 Oral Diagnosis and Medicine
790.41 Oral Diagnosis and Medicine
790.42 Oral Diagnosis and Medicine
790.43 Oral Surgery
790.44 Oral Surgery
790.45 Oral Surgery
790.46 Oral Surgery
790.47 Oral Surgery
790.48 Oral Surgery
790.49 Oral Surgery
790.50 Pediatric Dentistry
790.51 Pediatric Dentistry
790.52 Pediatric Dentistry
790.53 Pediatric Dentistry
790.54 Pediatric Dentistry
790.55 Pediatric Dentistry
790.56 Pediatric Dentistry
790.57 Periodontics
790.58 Periodontics
790.59 Periodontics
790.60 Periodontics
790.61 Periodontics
790.62 Periodontics
790.63 Periodontics
790.64 Removable Prosthodontics
790.65 Removable Prosthodontics
790.66 Removable Prosthodontics
790.67 Removable Prosthodontics
790.68 Removable Prosthodontics
790.69 Removable Prosthodontics
790.70 Removable Prosthodontics
790.71 Oral Radiology
790.72 Oral Radiology
790.73 Oral Radiology
790.74 Oral Radiology
790.75 Oral Radiology
790.76 Oral Radiology
790.77 Oral Radiology
792.01 Oral Pathology
Lectures in special phases of dentistry. Prereq: Permission of instructor. Repeatable.

792.02 Oral Pathology
General principles and concepts of pathology associated with the oral cavity.

792.03 Oral Pathology
Regional disturbances of the oral cavity.

792.04 Oral Pathology
Systemic disturbances and their oral manifestations.

792.05 Oral Pathology
Radiographic methods and diagnosis.

792.06 Oral Pathology
Examination and diagnosis of oral disease.

792.07 Dental Therapeutics
Principles of pharmacology in relation to patient care.

792.12 Errors in Measurement
Discussion of distribution functions as applied to random errors and the propagation of errors.

792.13 Oral Microbiology
Classified as to type of disease and to the pathologic processes of oral microorganisms.

792.14 Behavioral Sciences in Dentistry
A study of the psychological aspects of dental treatment involving the patient, dental personnel, and office staff. Repeatable to a maximum of 5 cr hrs.

792.16 Principles of Mechanics for Orthodontists P G 4
Study of basic mechanical principles including forces, couples, displacements, rotations, equilibrium, stress-strain, and properties of orthodontic wires.

792.17 Gerontology for the Health Professions G 3
Impact of the psychologic and socio-economic conditions associated with aging.

792.18 Research Topics in Oral Biology G 1
Preparation for oral biology faculty on their own ongoing research projects.

792.19 General Dentistry P G 1-5
Lectures in special phases of dentistry—general principles of general dental practice, primary oral healthcare, and related aspects, including practice management, etc. Robert C. Vessels, DDS.

792.20 Hospital Dentistry P G 1-5
Lectures in special phases of dentistry—general principles of general hospital dental practice and care of the medical patient. Daniel E. Jolly, DDS.

792.21 Legal Issues in Developing and Managing a Dental Practice G 2
This course outlines and discusses legal issues that a dental professional will be confronted with in dental practice.

792.22 Surgical Orthodontics P G 2
To provide the didactic component of the orthodontic deformities program and a prerequisite for participating in the clinical component of interdisciplinary management of patients.

793 Individual Studies P G 1-5
Individual assignments in each specialty of dentistry; students will elect to work in desired subjects after a conference with the instructor in charge.

793.01 Oral Surgery and Anesthesia

793.02 Orthodontics

793.03 Periodontics
This course is letter graded.

793.04 Prosthodontics

793.05 Oral Pathology

793.06 Endodontics

793.07 Pedodontics

793.08 Operative Dentistry

793.09 Oral Diagnosis

793.10 Fixed Partial Prosthodontics

793.11 Oral Radiography

793.12 Oral Biology Laboratory Rotation
Research activities and training in the laboratory of a program faculty member.

793.13 General Dentistry
Robert C. Vessels, DDS.

794 Group Studies P G 3-5
Group studies in special topics in each specialty of dentistry.

795 Seminars in Dentistry P G 1-5
Discussion of advances in dental science and review of original literature.
Dentistry

795.07 Pedodontics
795.08 Operative Dentistry
795.09 Oral Diagnosis
795.10 Fixed Partial Prosthodontics
795.11 Oral Radiography
795.12 General Dentistry
Discussion of advances in dental science and review of the original literature that will focus on general community based dental practice and the role of dental specialties. Robert C. Vessels, DDS.
1-5 hrs of seminar, variable with each qtr. Prereq: DDS or equiv and permission of instructor. Seminar for presentation and discussion of relevant scientific and clinical studies and procedures as they relate to general dental practice.
795.13 Hospital Dentistry
The focus in this area will be hospital and institutional based general dental practice. Daniel E. Jolly, DDS.
796 Specialty Seminars in Dentistry P G 1-5
Seminars in each of the specialty areas of dentistry for discussion of pertinent literature, presentation, and discussion of research work and demonstration of advanced techniques.
796.01 Oral Surgery and Anesthesia
796.02 Orthodontics
796.03 Periodontics
796.04 Prosthodontics
796.05 Oral Pathology
796.06 Endodontics
796.07 Pedodontics
796.08 Operative Dentistry
796.09 Oral Diagnosis
796.10 Fixed Partial Prosthodontics
796.11 Oral Radiography
796.12 Oral Biology Seminar
Student presentations of recent research findings, both original and from the literature.
Repeatable to a maximum of 2 cr hrs.
796.13 Advanced General Dentistry
Robert C. Vessels, DDS.
1-5 hrs seminar, variable with each qtr. Prereq: Permission of instructor and DDS or equiv. Seminar for presentation and discussion of clinical cases and advanced techniques with analysis and discussion of relevant literature.
796.14 Hospital Dentistry
Daniel E. Jolly, DDS.
1-5 seminar hrs, variable each qtr. Prereq: Permission of instructor and DDS or equiv. Seminar for presentation and discussion of clinical cases and advanced techniques with analysis and discussion of the literature in medicine and dentistry.
798 Advanced Clinical Practice in Dentistry P 3-10
Broad exposure to advanced principles and practices in each specialty of dentistry.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to maximum of 120 cr hrs.
798.01 Oral Surgery and Anesthesia
798.02 Orthodontics
798.03 Periodontics
798.04 Prosthodontics
798.05 Oral Pathology
798.06 Endodontics
798.07 Pedodontics
798.08 Operative Dentistry
798.09 Oral Diagnosis
798.10 Fixed Partial Prosthodontics
798.11 Oral Radiography
798.12 General Dentistry
The focus in this area will be general community based dental practice. Robert C. Vessels, DDS.
30 or more hrs of clinical practice time. Prereq: Permission of instructor and DDS or equiv. Clinical practice of application of specialty and general practice principles.
798.13 Hospital Dentistry
To focus in this area will be hospital and institutional based general practice. Daniel E. Jolly, DDS.
35 or more hrs of clinical practice time. Prereq: Permission of instructor and DDS or equiv. Clinical practice of application of specialty and general principles in general hospital practice.
800 Statistical Inferences and its Application to Dentistry G 3
Conceptual foundation of statistics related to basic, clinical and behavioral dental sciences.
Su Qtr. Prereq: DDS degree or permission of instructor.
801 Epidemiology of Oral Disease G 2
Principles and techniques used to assess oral disease in human populations.
Au Qtr. Prereq: 800 or permission of instructor.
802 Introduction to Dental Research Designs G 3
Conceptual and technical problems in the development and implementation of clinical, behavioral and basic science research projects related to dentistry.
Wi Qtr. 2 1/2-hr cl. Prereq: 800 or permission of instructor.
803 Biology of Oral Wound Repair G 3
Cell and molecular events of oral wound repair. Focus on biology of hard and soft tissues of oral cavity as related to advanced clinical dentistry.
Sp Qtr. 2 1/2-hr cl. Prereq: DDS degree or equiv.
804 Seminars in Dental Public Health G 3
Principles of dental public health and the methods used for planning, implementing, and evaluation of dental programs. Issues of oral health services delivery; oral health promotion and disease prevention; health policy, program management and administration.
Su, Wi, Sp Qtrs. 1 3-hr cl. Prereq: DDS degree or permission of instructor. Repeatable to a maximum of 9 cr hrs.
805 Orofacial Pain Management G 2
Review of common non-dental conditions producing chronic pain in the head and neck region. Neurophysiology of pain, diagnosis and treatment are stressed.
Sp Qtr. 1 1/2-hr cl. Prereq: DDS or MD degree.
806 Current Issues in Oral Biology G 3
Overview of current areas of oral health research.
Su, Au, Wi, Sp Qtrs. 3 hrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course will cover multiple topics of current oral health concern.
885 Histologic Laboratory Technique G 1-5
The preparation of oral and dental tissues for microscopic study.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.
894 Group Studies G 3-5
Advanced group studies in dentistry.
993 Individual Studies G 3-5
Advanced individual studies in dentistry.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable. This course is graded S/U.
999 Research in Dentistry G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Dutch

314 Cunz Hall, 1841 Millikin Road, 292-6985

5711* Basic Dutch for Reading U G 5
Fundamentals of grammar for reading purposes; applicable to students in humanities, sciences, social sciences, and professional schools.
Wi Qtr. 5 cl. Prereq: Grad standing or permission of instructor.

5721* Dutch for Research U G 3
Continuation of the principles learned in 571; applied readings in students' disciplines; emphasis on close translation, grammatical analysis, and vocabulary building.
Sp Qtr. 3 cl. Prereq: 571 or equiv or permission of instructor.

East Asian Languages and Literatures

204 Cunz Hall 1841 Millikin Road, 292-5616

131 East Asian Humanities U 5
Introduction to the contemporary and traditional cultures of China, Korea, and Japan taught through readings, films, demonstrations, and discussions.
Su, Au, Wi, Sp Qtrs. 5 cl. GEC arts and hums cultures and ideas course.

283 Individual Studies U 1-5 Individual investigation of problems in East Asian cultures, languages, and literatures. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies U 1-10 Special group studies course in some special area of East Asian language, literature, or culture. Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 20 cr hrs.

Women in East Asian and Asian-American Literature
See: Comp Std 314.

323 The Buddhist Tradition U 5 History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations. 5 cl. Prereq: Comp Std 202.01, 202.02, or 270; or REL S 270 recommended. Not open to students with credit for REL S 255. Cross-listed in Religious Studies.

341 Thought in China and Japan U 5 The shaping of two cultures; essentials of the major traditional schools of thought in China and Japan and their impact on society. Sp Qtr. 5 cl. GEC arts and hums arts and ideas course.

675 Women Writers, Culture, and Society in East Asia U G 5 Close examination of representative works of major women writers from China, Japan, and Korea in the cultural and ideological context of each country. Sp Qtr. 2-2 hr cl. No knowledge of East Asian languages is required. All reading materials are in English.

677 Performance Traditions in Contemporary East Asia U G 5 Introduction to performance traditions of East Asia (China, Korea, and Japan) as they are practiced today ethnographic methods are also explored. Sp Qtr. 2-2 hr cl.

683 Scripts of East Asia U G 5 A critical survey of writing systems that use Chinese characters, popular and scholarly myths about them, and their impact on the history of ideas. Au, Sp Qtrs. 2-2 hr cl. Prereq: Chinese or Japanese 103, or permission of instructor.

693 Individual Studies U G 1-5 Individual investigation of East Asian cultures, languages, and literatures. Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5 Special topics to be announced in the quarter previous to the one in which the course is offered. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15 An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Learning East Asian Languages in Cross-Cultural Contexts: College Level G 4 Principles and practices of teaching an East Asian language as a foreign language at post-secondary level. American academic institutions. Su Qtr. 5 cl. Prereq: High-level competency in the target East Asian language, concurrent registration in 703 and 704, and permission of instructor. Repeatable to a maximum of 8 cr hrs.

701 Pedagogical Syntax for East Asian Languages U G 3 Training in the presentation of grammar in East Asian language classes; special attention given to problems of translating linguistic studies into teachable units. Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor.

702 Materials Preparation for East Asian Languages U G 3 Preparation of materials for teaching Chinese, Japanese, and Korean; emphasis on the special problems faced by English-speaking students in learning these languages. Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor.

703 Presentation of East Asian Languages and Cultures: College Level G 4 Preparation and presentation of curriculum and syllabus for East Asian language program at the college level. Su Qtr. 5 cl. Prereq: High-level competency in the target East Asian language, concurrent registration in 700 and 704, and permission of instructor. Repeatable to a maximum of 8 cr hrs.

704 Teaching Practicum in East Asian Languages: College Level G 7 Training as a classroom teacher through practice teaching to college students and the observation of classes taught by trainees and master teachers. Su Qtr. 10 cl. Prereq: High-level competency in the target East Asian language and permission of instructor. Repeatable to a maximum of 10 cr hrs.

710 Learning East Asian Languages in Cross-Cultural Contexts: High School Level G 2 Principles and practices of teaching an East Asian language as a foreign language in American high schools. Su Qtr. 5 cl per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 713 and 714, and permission of instructor. Repeatable to a maximum of 4 cr hrs.

713 Presentation of East Asian Languages: High School Level Principles and practices of an East Asian language at the high school level. Su Qtr. Repeatable to a maximum of 6 cr hrs.

713.01 Year One G 2 5 cl per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 710 and 714.01, and permission of instructor. This course is progress "P" graded. Credit will be given upon completion of 713.02.

713.02 Year Two G 1 5 cl per week for 2 weeks. Prereq: Intermediate to high competency in the target East Asian language, 710 and 713.01, concurrent registration in 714.02, and permission of instructor.

714 Teaching Practicum in East Asian Languages: High School Level Training as a classroom teacher through practice teaching to high school students and the observation of classes taught by trainees and master teachers. Su Qtr. Repeatable to a maximum of 6 cr hrs.

714.01 Year One G 2 10 cl per week for 4 weeks. Prereq: Intermediate to high competency in the target East Asian language, concurrent registration in 710 and 713.01, and permission of instructor. This course is progress "P" graded. Credit will be given upon completion of 714.02.

714.02 Year Two G 2 10 cl per week for 2 weeks. Prereq: Intermediate to high competency in the target East Asian language, 710 and 714.01, concurrent registration in 713.02, and permission of instructor.

850 Analytical Methods G 5 Introduction to the literary and linguistic analysis of Chinese and Japanese texts. Au, Wi, Sp Qtrs. 2-2 hr cl. Prereq: Chinese or Japanese 800.

East European Languages and Literatures

232 Cunz Hall, 1841 Millikan Road, 292-6733
Also see Slavic Languages and Literatures.

294 Group Studies U 1-5 Topics related primarily to Albanian, Estonian, Hungarian, Latvian, and Lithuanian. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for each of the languages listed above.

671 Grammar of Selected East European Languages U G 5 Fundamentals of grammar as required for reading one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian. Wi Qtr. 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 25 cr hrs; individual languages not repeatable.

672 Reading of Selected East European Languages U G 5 Reading of elementary and intermediate texts and translating into English one of the following: Albanian, Estonian, Hungarian, Latvian, Lithuanian, or Romanian. Sp Qtr. 5 cl. Prereq: 671 (same language) or equiv, and permission of instructor. Repeatable to a maximum of 25 cr hrs; individual languages not repeatable.
Economics

410 Arps Hall, 1945 North High Street, 292-6701

110 Current Economic Events in Historical Perspective U 5
Introduction to elementary techniques of economic analysis; historical background useful for interpreting current economic events.
Au Qtr. 2-2 hr cr or 4-1 hr cr. Intended for students who desire a one-course introduction to economics. GEC soc sci human, natural, and economic resources course.

200 Principles of Microeconomics U 5
Introduction to economic theory: supply and demand for goods and services; market structure; the distribution of income.
Su, Au, Wi, Sp Qtrs. 5 cl. H200 (honors) may be available to students enrolled in an honors program or by permission of dept. First required course for students planning to take 500-level courses in econ. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

201 Principles of Macroeconomics U 5
Theory of national income determination; economic fluctuations; money; government policy; international economics.
Su, Au, Wi, Sp Qtrs. 5 cl. H400 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 400. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

294* Group Studies U 1-5
Current problems not covered in other courses; application of economic analysis of scarcity and choice of current policy significance.
5 cl. Prereq: 100 or 200 or equiv. Repeatable to a maximum of 10 cr hrs.

367 Second Writing Course U 5
2-2 hr cr or 4-1 hr cr. Prereq: 200 and 400, or equiv. GEC second writing courses.

367.01 The American Economy in the 20th Century
Survey of major economic developments in the American economy during the 20th century.
Au, Wi, Sp Qtrs.

367.02 Current Economic Issues in the United States
Study of problems currently facing the U.S. economy.
Su, Au, Wi, Sp Qtrs.

367.03 War and Economics: The American Experience
Study of the ways that war affects and is affected by the economic problem of allocating scarce resources.

443 The Analysis and Display of Data U 5
Analysis of data; introduction to the Internet; introduction to techniques in the graphical presentation of data; designed for economics and international studies majors.
Sp Qtr. 2 2-hr cl, lab arr. Prereq: Completion of GEC Data Analysis requirement. Not open to students with credit for Int Stds 443. Cross-listed in International Studies.

444 Elementary Econometrics U 5
Basic methods of data analysis used in economics, including descriptive statistics, hypothesis testing, and regression analysis.
Su, Au, Wi, Sp Qtrs. 4 1-hr cr, or 2 2-hr cr. Prereq: Stat 145 or Ag Ec 205 or equiv.

500 Evolution of Economic Thought U 5
Critical analysis of ideas of great economists, factors which influenced those ideas; their impact upon social and economic development of the modern world.
4 cl. Prereq: 200 and 201 or 400, or equiv.
580 Labor Economics and Industrial Relations  U G 5
Survey of the field of labor economics; trade unionism, collective bargaining; wage determination, employment, unemployment; labor legislation.
Au. Wi. Sp Qtrns 4 cl. HS80 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 200 and 201 or 400 or equivs.

590 Urban Economics  U G 5
Analysis of urban spatial structure utilizing the techniques of economics; detailed studies of urban problems concerning housing, congestion, air pollution, local public finance, zoning, and city size.
4 cl. Prereq: 200 and 201 or 400, or equivs. Not open to students with credit for 206 or 694.07.

591t Economics of Environmental Quality  U G 5
Analysis of the relationships among natural resources, growth, pollution control, congestion, and social institutions.
4 cl. Prereq: 200 and 201 or 400, or equivs. Offered in cooperation with Natural Resources.

H596 Honors Seminar in Economics  U 2 or 3
Presentations by selected faculty of economic topics and issues of current interest; discussion of research problems and methods.
1 2-hr cl. Prereq: Honors program enrollment or permission of instructor.

600 Applications of Mathematics in Economic Analysis  U G 5
Coverage of the most common applications of mathematics to economic analysis and econometrics; the necessary tools from matrix algebra and calculus.
5 cl. Prereq: Math 152 or equiv and permission of instructor.

601 Game Theory in Economics  U G 5
Game theory and applications to strategic situations.
2 2-hr or 4 cl. Prereq: 501 and Math 132 or equiv.

613 Economic History of the United States  U G 5
General survey from discovery of America to present; European economic background; westward movement and its effects; development of economic institutions in the United States.
Au. Sp Qtrns 4 cl. Prereq: 444, 501, and 502; or grad standing.

614 Economic History of Western Europe  U G 5
Survey from 1750 through the post-World War II period; from Britain in the West to Russia in the East.
Wi Qtr. 4 cl. Prereq: 444, 501, and 502; or grad standing.

620 Money, Income and Employment: Theory and Policy  U G 5
Demand for money, U.S. monetary policy, hyperinflations, and coordination of monetary and fiscal policy.
2 2-hr or 4 cl. Prereq: 502; 444 or equiv recommended.

625 National and International Money Markets  U G 5
Organization, functions, and control of money markets and their submarkets; flow of funds in these markets and investment policies of market participants.
4 cl. Prereq: 444, 501, and 520.

631 Federal Finance and Fiscal Policy  U G 3
The economics of government spending and taxation; analysis of the fiscal role and instruments of government and their effects on the economy.
4 cl. Prereq: 444 and 530, or equivs. Not open to students with credit for PUBPOL & 651. Cross-listed in Public Policy and Management.

633 State and Local Government Finance  U G 3
Economic analysis of revenues and expenditures of state and local governments; vertical and horizontal relationships between agencies and units; specific problems in these areas.
4 cl. Prereq: 444 and 530, or equivs. Not open to students with credit for PUBPOL & 653. Cross-listed in Public Policy and Management.

640 Probability Theory  U G 5
Probability, random variables, Markov chains, discrete and continuous distributions, transformations, moment generating function techniques, limit theorems, expectation, variance.
Au Qtr. 4 cl. Prereq: Math 153 or equiv. Not open to students with credit for Stat 520 or 620.

641 Applied Regression and Correlation Analysis  U G 5
The general linear regression model; multiple correlation, path analysis, analysis of variance and tests of significance; specification errors.
Wi Qtr. 4 cl. Prereq: 501 and Stat 245 or equivs.

642 Applied Economic Models and Forecasting  U G 5
Application of economic and statistical principles to economic problems; applications include topics in labor economics, industrial organization, macro models, and international trade.
Sp Qtr. 4 cl. Prereq: 501, 502, 641, and Math 132; or equivs.

Comparative advantage and the gains from trade; tariffs and other trade restrictions; economic effects of protective policies; U.S. commercial policies; regional economic integration.
4 cl. Prereq: 444 and 501.

666 Financial Aspects of International Trade  U G 5
International payments and receipts; foreign exchange markets; balance-of-payments adjustment under different monetary systems; macroeconomic policy; international monetary reforms; foreign investments; multinational corporations.
4 cl. Prereq: 444 and 502.

670 Structure of Industry  U G 5
Nature, role, and regulation of competition; market structure and social performance; antitrust laws; current economic, legal, and policy problems in the antitrust area.
4 cl. Prereq: 444 and 501, or grad standing.

672 Economic Analysis of Japanese Firms and Markets  U G 5
Applications of economic analysis to Japanese industrial organization including the firm's internal incentive structure, labor markets, and financial institutions.
4 cl. Prereq: 200, 201 or 400, and 444; or equivs. 501 recommended.

685 Labor Economics  U G 5
Labor demand and supply; wages, unemployment, and inflation; economics of the household's allocation of time.
4 cl. Prereq: 501 or equiv.

693 Individual Studies  U G 1-5
Advanced readings in economics and related fields.
Su. Au. Wi. Sp Qtrns. Prereq for jrs: An average of B or better in all econ courses taken and a CPHR of 3.0 or above. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

694t Group Studies  U G 3-5
Advanced courses in economics and related fields.
Repeatable to a maximum of 15 or hrs.

697 Study at a Foreign Institution  U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su. Au. Wi. Sp Qtrns. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 15 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Advanced Mathematical Techniques in Economics  G 5
Advanced mathematical analysis of economic problems; topics include basic set theory and real analysis; optimization subject to inequality constraints and dynamic optimization.
Au Qtr. 2 1/2-hr cl. Prereq: 600 or equiv. Not open to students with credit for this topic under 684.

730 Public Finance  U G 5
Comprehensive survey and analysis of the principal fiscal activities of contemporary governments: logic of public sector activity; taxation principles and practice, intergovernmental relations, current fiscal problems.
Wi Qtr. 2 2-hr cl. Prereq: PUBPOL & 830, or Econ 501A and grad standing, or permission of instructor. Not open to students with credit for 530 or PUBPOL & 730. Cross-listed in Public Policy and Management.

736 Comparative Political Economy  G 5
A graduate-level course designed to survey contemporary theories on the interaction between economic policies, domestic institutions, the international economy, and their consequences on the macroeconomy.
Wi Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with 10 cr hrs of Politi Sc 735. Repeatable to a maximum of 10 cr hrs, with permission of instructor. Cross-listed in Political Science.

740 Inference and Decision Analysis under Uncertainty  G 5
Distribution theory, point and interval estimation, statistical hypothesis testing, decision analysis under uncertainty.
Wi Qtr. 4 cl. Prereq: 640 or equiv.

741 General Linear Regression Analysis  G 5
Multiple regression analysis; the general linear model; non-linear and distributed lag models.
Sp Qtr. 4 cl. Prereq: 600 and 740, or Stat 521.

742 Econometrics  G 5
Review of the general linear model; identification; estimating criteria; single and simultaneous equation estimation; econometric application.
Au. Sp Qtrns. 4 cl. Prereq: 741.
780 The Field of Political Economy G 5
The modern field of political economy: the interaction of markets and politics as well as the use of the tools of economics to explain social behavior.
Wi Qtr. 2 2-hr cl. Not open to students with credit for Polit Sc 780. Cross-listed in Political Science.

H783 Honors Research U 3-5
A program of study arranged for each student, with individual conferences, reports, and honors thesis. Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the econ courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs. are required for the degree with distinction in econ. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

790 Urban Economics G 5
Application of economic theory to urban problems: topics include slums, residential segregation, intra-city location of economic activity, urban renewal, urban sprawl, transportation, and governmental organization. Sp Qtr. 4 cl. Prereq: 705, Geog 650, and grad standing; or permission of instructor.

804 Microeconomic Theory I G 5
Theories of consumers and producers. Au Qtr. Prereq: 501A or equiv.

805 Microeconomic Theory II G 5
Classical partial equilibrium (competition, monopoly, monopolistic competition, Cournot and Bertrand oligopoly models, location models) and general equilibrium theory. Wi Qtr. Prereq: 800 and 804.

806 Macroeconomic Theory I G 5
Theory of income and employment; Keynesian aggregate supply and demand; consumption, saving, and the multiplier; determinants of investment and the accelerator; government's role. Au Qtr. Prereq: 502A or equiv.

807 Macroeconomic Theory II G 5
Aggregate supply: expectations, introduction to dynamic macroeconomic models. Wi Qtr. Prereq: 600, 804, and 806. Not open to students with credit for 809.01.

808 Microeconomic Theory III G 5
Partial equilibrium welfare theory; economic dynamics; economics of information and uncertainty; and elementary game theory; may also include topics in industrial organization, labor, public finance, and others. Sp Qtr. Prereq: 805.

809 Macroeconomic Theory III G 5
Stochastic dynamic problems in macroeconomics; questions of growth, business cycles, and policy. Sp Qtr. Prereq: 807. Not open to students with credit for 809.02.

811 Applied Macroeconomics G 5
Application of econometric methods to theoretical structures developed in 808 and 809; estimation and validation of macroeconomic models. Sp Qtr. 2 2 1/4-hr cl. Prereq: 724 and 809; or permission of instructor.

815 Mathematical Economics I G 5
Mathematical analysis of microeconomic problems including consumer and production theory and general equilibrium. Prereq: 808.

816 Mathematical Economics II G 5
Mathematical analysis of macroeconomic problems including static and dynamic systems and optimal control. Prereq: 809.

818 Economics of Information G 5
How information affects economic decision making in strategic settings and on markets; topics include theories of speculation, rational expectations, signaling principal-agent models, and search. Au Qtr. 2 1/2-hr cl. Prereq: 804, 805, 808. Not open to students with credit for this topic under 894.

820 Monetary Theory G 5
Role of money in theoretical analysis of forces determining and influencing level of income, employment, and prices. Au Qtr. Prereq: 520, 805, and 806, or equiv.

830 Advanced Public Finance I G 5
A theoretical and empirical investigation of the economic behavior of the public sector; theory of social goods, problems of tax structure, incidence, multi-unit finance. Au Qtr. Prereq: 805.

832 Advanced Public Finance II G 5
Continuation of 830; topics include intergovernmental relations, tax incidence, and tax reform. Wi Qtr. Prereq: 830.

840 Time-Series Econometrics G 5
Fundamental elements of time series methods; recently developed techniques for the analysis of economic time series. Au Qtr. 2 2-hr cl. Prereq: 742.

842 Advanced Econometrics G 5
Theory and application of advanced quantitative research methods; computarized application of econometric methods developed in 742. Wi Qtr. Prereq: 742.

861 Advanced Microeconomic Trade Theory G 5
Advanced nonmonetary international trade theory; analysis of the effect of trade and commercial policies on the allocation of resources, income distribution, and growth. Au Qtr. 4 cl. Prereq: 805.

862 Advanced Macroeconomic Trade Theory G 5
Advanced monetary international trade theory; analysis of payments adjustments under alternative international monetary institutions. Wi Qtr. Prereq: 805 and 806; 861 recommended.

863 Economic Growth and International Trade G 5
Evolution of the world economy, from theoretical and empirical perspectives, including Solow growth models, optimal economic growth, models of overlapping generations, and endogenous economic growth. Sp Qtr. 2 2-hr cl. Prereq: 808.

871 Industrial Organization I G 5
An investigation of information economics and market-based transactions in the theory of the firm. Wi Qtr. 2 2-hr cl. Prereq: 808.

872 Industrial Organization II G 5

883 Advanced Labor Economics I G 5
The firm as production function, employment contracting in a competitive market, and collective action (labor unions and employment contracting). Au Qtr. Prereq: 805 and 806.

884 Advanced Economics of the Labor Market G 5
Economic theory and empirical evidence relating to labor allocation and wage determination. Wi Qtr. Prereq: 805 and 806.

893 Individual Studies G 1-15
Advanced readings in economics and related fields. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable. This course is graded S/U.

901 Supervised Teaching in Economics G 5
Supervised teaching of undergraduate courses in economics for students pursuing the Doctor of Arts degree. Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

915 Seminar in Price Theory G 5
Special topics in economic theory. Au, Sp Qtrs. Prereq: 808 and 809. Repeatable to a maximum of 30 cr hrs.

920 Seminar in Monetary Policy G 5

940 Seminar in Econometrics G 5
Examination of economic problems whose solutions may advantageously be sought by use of the methods of mathematics and mathematical statistics. Au, Sp Qtrs. Prereq: 742 and 842 or equiv or permission of instructor. Repeatable to a maximum of 30 cr hrs.
Education: Physical Activity and Educational Services

Notice: All courses may not appear in this listing. (For a complete listing of courses, please contact the Office of Student Services and Academic Programs listed above.)

The areas of specialization and the courses in the School of Physical Activity and Educational Services are listed below:

Special Education
251, 289.4-7, 650, 699, 676, 677, 693.10, 693.47, 712, 715, 718, 725, 742, 743, 746, 748, 749, 750, 751, 752, 764, 771, 772, 812, 813, 814, 825, 826, 830, 831, 832, 847, 861, 873, 874, 884.10, 884.47, 885, 888, 893.10, 893.47, 895.10, 895.47, 999.10, 999.47

Sport and Exercise Sciences

Wellness and Human Services
270.1, 270.02, 270.03, 270.04, 271, 289.01, 289.02, 289.0, 605, 693.30, 767, 768, 773, 774, 775, 776, 779, 799, 790, 791, 792, 800.01, 800.02, 801.01, 801.02, 844, 862, 864, 875, 876, 864, 884.25, 884.34, 884.54, 925.20, 925.30, 925.34, 926.01-02.06.09, 927, 928, 974, 975, 976, 979, 979, 986, 987, 988, 989, 990, 991, 992, 999.25, 999.30, 999.34, 999.63.

Workforce Education and Lifelong Learning
675.01-075.09, 609, 622, 623, 624, 628.01, 628.02, 628.03, 629, 632, 633, 646, 648, 649, 655, 662, 663, 664, 665, 668, 667, 668.01-668.09, 672, 673, 674, 693.40, 757, 759, 803, 804, 81.1, 817, 818, 828, 834, 838, 925.40, 931, 932, 934, 935, 936, 991.40.

102 First Aid U 2
A consideration of first aid practices to the injured; designed to lead to Red Cross certification in first aid.
2 hrs arr lab.

103 Health and Well-Being in American Society U 3
A study of student health problems; designed to foster understandings and attitudes needed for intelligent decision-making related to present and future health needs.
3 hrs arr. Not open to students with credit for 200.

122 Techniques in Cardiopulmonary Resuscitation U 1
Development of skills and competency in recognizing and reacting to situations requiring cardiopulmonary resuscitation measures; completion leads to certification in CPR by American Red Cross.
1 cl. This course is graded S/U.

137 Sport for the Spectator U 3
A study of the great American spectator sports including football, basketball, baseball, hockey, golf, tennis, and others which meet the interests of the class.
1.2 hr cl, 1.2 hr lab.

139 Introductory Program of Outdoor Pursuits U 1
A study of and participation in the skills and knowledge of various sports and outdoor recreational activities in a natural setting.
Minimum of 6 cl and 24 lab hrs. Arr. Not open to students who have completed a corresponding subdivision of 140. Preregistration with department required. Travel and subsistence costs for activities will be borne by the student. These courses are graded S/U.

139.01 Scuba II
Introduction to fresh water diving.
Prereq: 179 or equiv. Student must provide wetsuit (rentals may be available).

139.02 Whitewater Rafting U 1
Introduction to basic whitewater rafting, including; river reading, paddling techniques, equipment, trip planning, and safety.
6 of hrs, 24 lab hrs, arr. hrs. Prereq: Student must provide sleeping bag and appropriate clothing for river conditions.

139.03 Backpacking I
Introduction to basic backpacking techniques, equipment, wilderness travel, emergency procedures, and environmental awareness.
Student must provide sleeping bag and hiking boots.

139.04 Cycling I
Introduction to cycle touring with an emphasis on safety, equipment repair, maintenance, and trip planning.
Student must provide bicycle and sleeping bag.
139.05 Winter Backpacking
Designed for the experienced backpacker and covers winter camping, clothing, travel techniques, and advanced first aid.
Prereq: 139.03 or previous backpacking experience. Student must provide sleeping bag and hiking boots.

139.06 Skiing
Alpine and/or cross country skiing with instruction appropriate to various ski levels.
Prereq: Ski experience desirable. Repeatable to a maximum of 3 cr hrs. Student must provide boots, poles and skis (rentals available).

139.07 Experimental Sections
Activities will be announced and publicized whenever an experimental section is deemed worthy of trial.

139.08 Canoeing II
Use of canoeing skills on an overnight trip or on several day trips in the area.
Prereq: 177.02 or equiv. Student must provide sleeping bag for overnight trip.

139.09 Caving I
Introduction to basic caving techniques, equipment, trip planning, and safety; cave related ecology, flora, and fauna will also be emphasized.
Student must provide sleeping bag.

139.10 Lightweight Backpacking
Advanced backpacking activities including navigation, rope handling skills, and survival techniques.
Prereq: 139.03 or previous backpacking experience. Open to students with credit for 140.05. Student must provide sleeping bag and hiking boots.

139.11 Rock Climbing
Basic rock climbing techniques, rope handling, and safety systems will be covered.
Prereq: Good physical condition. Students must provide sleeping bag, appropriate footwear for the climbing trip and a 20’ length of new 1” nylon webbing.

139.12 Beginning Trap Shooting
An introductory course covering equipment selection and maintenance, shooting techniques, scoring, safety, and the opportunities for lifetime involvement.
Cost of ammunition and targets must be borne by the student.

139.13 Orienteering
Introduction to the sport of orienteering involving compass skills, map reading, and cross-country travel; cross-country racing in its competitive form.
Student must provide compass and bear transportation costs.

139.15 High Ropes Course U 1
A series of high ropes course experiences on challenging and formidable obstacles 25 to 40 feet above ground.
1 2-hr cl, 4-5 hrs field experience. Participants should be physically fit. A nominal lab fee will be assessed to cover the cost of using the ropes courses and insurance. Students must provide their own transportation.

139.16 Small Bore Outdoor Prone Rifle Shooting U 1
A continuation of 171.01 and 171.02 in the sport of outdoor prone shooting as practiced locally and nationally.
Arr. Prereq: 171.01 or 171.02 or permission of instructor. Repeatable to a maximum of 2 cr hrs. Fee for supplies required. This course is graded S/U.

140 Outdoor Pursuits Program U 3
A study of and participation in the skills and knowledge of various sports and outdoor recreational activities in a natural setting.
Minimum of 53-hr training; minimum of eight trip days. Repeatable to a maximum of 12 cr hrs; subdivisions may not be repeated. Preregistration with dept is required.

140.03 Backpacking II
Opportunity for practice in advanced camping and outing skills on an extended trip.
Prereq: Backpacking I or prior backpacking experience.

140.06 Skiing U 3

140.07 Experimental Sections
Activities deemed worthy of developing on an experimental basis; activities will be announced and published when course is offered.

140.10 Wilderness Advanced First Aid
Will prepare students for emergency situations that involve prolonged patient care and transport, severe environments, and improvised gear. Arr. Repeatable to a maximum of 6 cr hrs. Intensive 4 day live-in program.

141 Adapted Physical Education Activities U 1
Special sections of conditioning and sport activities open only to students with temporary or permanent physical disabilities which would prevent their participation in regular classes.
2 lab hrs arr. Repeatable to a maximum of 12 cr hrs. Offerings to be announced quarterly. Students register for desired section using alphabetical designation.

A—Archery
B—Badminton
D—Bowling
E—Special Conditioning
F—Golf
G—Riflery
H—Basic Swimming
I—Table Tennis
J—Tennis
K—Self Defense

142 Archery
Repeatable to a maximum of 3 cr hrs; subdivisions not repeatable.

142.01 Archery I U 1
Introductory skills and knowledges essential for target shooting.
2 lab hrs arr.

142.02 Archery II U 1
Continuation of 142.01, refining shooting techniques with emphasis on archery as a lifetime leisure pursuit.
2 cl. Prereq: 142.01 or permission of instructor.

143 Badminton U 1
2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

143.01 Badminton I
Beginning skills and knowledge essential for playing badminton.

143.02 Badminton II
Continuation of 143.01 with emphasis on advanced strategy in doubles and angles; intermediate skills.
2 lab hrs arr. Prereq: 143.01 or equiv racquet sport experience.

144 Basketball U 1
Skill and strategy necessary for playing basketball.
2 lab hrs arr. Prereq: Previous playing experience. Those with varsity experience should elect 631.02. Registration must include letter designation.
A—Women
B—Men

145 Bowling U 1
2 lab hrs arr. Subdivisions not repeatable. Students must provide bowling shoes (rentals available) and have ID card.

145.01 Bowling U 1
Introductory skills and knowledge essential for bowling.

145.02 Bowling II
Emphasis on improving the average through increased efficiency in the use of the hook ball and spot bowling.
Prereq: 145.01 or ability to average at least 125.

146 Boxing for Beginners U 1
Fundamentals of boxing.
2 lab hrs arr.

147 Conditioning Activities U 2
Lecture material covering principles of conditioning is applied in the activity section which the student elects. 
1 cl. 3.1-hr lab. Register for desired laboratory sections using alphabetical designation.

A—Circuit Training
C—Jogging
G—Swimming—Prereq: 178.03 or equiv.
G—Weight Training
H—Diet and Exercise
J—Rhythmic Aerobics

148 Lifetime Fitness Programs U 1
Continued application of the principles covered in 147. 
3.1-hr lab. Prereq: 147. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable. Register for desired laboratory section using alphabetical designation.

A—Circuit Training
C—Jogging
F—Swimming—Prereq: 178.03 or equiv.
G—Weight Training
H—Diet and Exercise
J—Rhythmic Aerobics

151 Advanced Strength and Conditioning U 3
Strength and power training; advanced anaerobic and speed conditioning.
4.2-hr cl. Prereq: Permission of instructor based on past strength training and experience and current conditioning level as determined by pretest. Repeatable to a maximum of 12 cr hrs. This course is graded S/U. Not open to students with credit for HPER 150.
153 Recreational Dance Forms
Beginning, intermediate, and advanced level courses in social dance and folk/square dance; women register for "A" sections, men for "B" to induce even pairing.
153.01 Social Dance I U 1
Introduction to basic steps and variations of selected standard social dances including fox trot, waltz, swing, cha-cha, rhumba, and tango.
2 1-2 hr cl.
153.02 Social Dance II U 2
Continuation of 153.01 with emphasis on style and technique; introduction of additional social dance contents.
2 2-3 hr cl. Prereq: 153.01.
153.03 Social Dance III U 2
Advanced social dance skills and techniques with increased emphasis on design and development of steps and variations; a performance project is required.
2 2-3 hr cl. Prereq: 153.02.
Repeatability to a maximum of 4 cr hrs.
153.05 Folk and Square Dance I U 1
Introduction to basic folk and square dance steps and patterns.
2 1 hr cl.
153.06 Folk and Square Dance II U 2
Continuation of 153.05 with additional instruction in New England contra dancing and clogging; rhythmical acuity and correct styling are stressed.
2 2-3 hr cl. Prereq: 153.05 or equiv.
153.07 Folk and Square Dance III U 2
Advanced level square and folk dance focusing on performance and choreography; square dance calling and folk dance choreography are taught; a live performance, designed and performed by students will culminate the quarter's study.
2 2-3 hr cl. Prereq: 153.05, 153.06, or equiv. Repeatability to a maximum of 4 cr hrs.

154 Fencing
Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.
154.01 Fencing I U 1
Fundamentals of foil fencing.
2 lab hrs arr.
154.02 Fencing II U 1
Continuation of 154.01 with emphasis on the bout.
2 lab hrs arr. Prereq: 154.01 or equiv.
154.03 Fencing III U 2
Intermediate-advanced skills of foil fencing; introduction to epee and sabre; students will begin specializing in one weapon.
4 lab hrs arr. Prereq: 154.02.

156 Football U 1
Fundamental skills of touch football.
2 lab hrs arr.
156.03 Flag Football
Co-ed sections for experienced touch football players.

157 Golf U 1
2 lab hrs. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.
157.01 Golf I
Introductory skills and knowledge preparatory to course play with emphasis on irons.
157.02 Golf II
Continuation of 157.01 with emphasis on woods and on introduction to course play. Prereq: 157.01 or equiv. Advanced players should elect 631.06.

158 Gymnastics U 1
Development and practice of gymnastic skills.
2 lab hrs arr. Subdivisions 158.01 and 158.04 not repeatable.
158.01 Women's Gymnastics I
Introduction to the four Olympic gymnastic events for women: floor exercise, vaulting, beam, and uneven parallel bars.
2 cl.
158.02 Women's Gymnastics II
Continuation of 158.01.
2 cl. Prereq: 158.01 or previous experience. Repeatable to a maximum of 2 cr hrs.
158.04 Men's Gymnastics I
Introduction to the six Olympic gymnastics events for men: floor exercise, side horse, rings, vaulting, parallel bars, and horizontal bar.
2 cl.
158.05 Men's Gymnastics II
Continuation of 158.04.
2 cl. Prereq: 158.04 or previous experience. Repeatable to a maximum of 2 cr hrs. Advanced students should elect 631.05.

161 Horseback Riding U 1
3 lab hrs arr. Repeatable to a maximum of 3 cr hrs; subdivisions not repeatable. Travel and stable costs (rental of horse and equipment) for activities must be borne by the student. Offered only when arrangements can be made with local stables. Preregistration at Dept. required. These courses are graded S/U.
161.01 Horseback Riding I
Fundamental skills and knowledge essential for safe riding.
161.02 Horseback Riding II
Continuation of 161.01 with emphasis on improved form and control of the horse.
Prereq: 161.01 or knowledge of canter leads and ability to post diagonals.
161.03 Horseback Riding III
Introductory skills of jumping with stress on hunt seat and low jumps.
Prereq: 161.02 or equiv.

162 Ice Skating
Basic skills of ice skating.
Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.
Students must provide skates (rentals available).
162.01 Ice Skating I U 1
Fundamentals of balance, movement, and safety on the ice; forward, backward, and stopping. Guidance in choice, use, and care of equipment.
2 lab hrs arr. Open only to beginners. This course is graded S/U.
162.02 Ice Skating II U 1
Elementary skating with emphasis on correct technique for basic skills.
2 lab hrs arr. Prereq: 162.01 or ability to skate forward, backward, and stop with no balance problems.
162.03 Ice Skating III U 2
Power skating; designed for persons having had more than 30 hrs on ice and who can execute the basic strokes (including back crossovers) with correct techniques.
4 lab hrs. Prereq: 162.02 or 162.04 or equiv skill level.

163 Figure Skating
Figure skating skills and techniques including the elements of free skating and compulsory figures.
Repeatable to a maximum of 5 cr hrs; subdivisions not repeatable.
Students must provide figure skates (no rentals). VPA Admins Cond courses.
163.01 Figure Skating I U 2
Lectures: survey of figure skating includes history, types of competition, judging, recreational, and show skating. Lab: introduction to free skating, compulsory figures, and dance skating.
1 cl, 3 lab hrs. Prereq: 163.03 or permission of instructor.
163.02 Figure Skating II U 2
Intermediate and advanced freestyle; intermediate: all single jumps, basic spins, and advanced footwork; advanced: jump combinations, spin combinations, and double jumps.
3 lab hrs arr. Prereq: 163.01 or permission of instructor.
163.03 Creative Skating U 2
163.04 Skating: Ice Dancing U 2
163.05 Competitive Figure Skating U 2
Compulsory figures and freestyle designed to prepare skater for United States Figure Skating Association tests and competitions.
2 2-3 hr cl. Prereq: 163.02 or permission of instructor.
163.06 Precision Team Skating U 1
Introduction to team skating, including learning of basic holds and basic formations and participating in a group four-minute program to music.
1 2-3 hr cl. Prereq: 162.02 or permission of instructor. Students must be able to skate forward and backward with ease, have good balance, and be able to stop. Repeatable to a maximum of 3 cr hrs. Figure skates required; rentals are available. There will be one performance outside of class.

164 Ice Hockey U 1
Fundamental skills and knowledge essential for playing ice hockey.
2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable. Students must provide hockey skates (rentals available).
164.01 Ice Hockey I
Introductory skills and techniques of ice hockey.
Prereq: 162.02 or equiv. Open only to beginners.
164.02 Ice Hockey II
Intermediate-advanced play.
Prereq: 164.01 or previous playing experience.

167 Lacrosse U 1
Fundamental skills and knowledge essential for playing Lacrosse.
2 lab hrs arr.
167.01 Women's Lacrosse U 1
167.02 Men's Lacrosse U 1
**Movement and Self Awareness U 1**
Student's natural movement vocabulary is explored and extended through movement experiences designed to heighten self and social awareness; creative rather than imitative approach is used.
2 lab hrs arr.

**Art Forms**
An exploration and orientation to Eastern movement martial art forms.
2 lab hrs arr. Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.

169.01 Aikido U 1
An introduction to a harmonizing martial art, designed to increase physical and mental centeredness; to improve grace, balance, awareness, and general movement abilities; to aid in self defense.

169.02 Aikido II U 2
Intermediate skills, techniques, and practice of Aikido; acquaintance with and development of an understanding of rank and examination requirements.
2 2-hr cl. Prereq: 169.01, 6th kyu rank, or permission of instructor.

169.04 Judo I U 1
Introductory skills and knowledge essential to throwing techniques and mat work of Judo.

169.05 Judo II U 2
Intermediate skills and techniques of Judo as well as an introduction to the skills involved in competitive Judo.
2 2-hr labs. Prereq: 169.04 or equiv. by National Collegiate Judo Association.

169.08 Judo III U 2
Advanced skill acquisition in techniques of sport Judo and experience in competitive Judo.
2 2-hr labs. Prereq: 169.05 or equiv or certified Yonkyu by National Collegiate Judo Association.

169.07 Karate I U 1
Introduction to the fundamental forms and techniques of Karate.
2 lab hrs.

169.08 Karate II U 2
The refinement of basic forms and techniques and the introduction of advanced forms; more emphasis on free fighting.
4 lab hrs arr. Prereq: 169.07 or equiv.

169.10 Shuai Chiao U 1
Introduction to the various forms and techniques of Shuai Chiao—Chinese wrestling, a combination of Karate and Judo.
2 lab hrs arr.

169.11 Shuai Chiao II U 2
Intermediate forms and techniques of Shuai Chiao as well as an introduction to the skills involved in competitive Shuai Chiao.
2 cl. Prereq: 169.10 or equiv or certified fith Chieh by International Shuai Chiao Association. Repeatable to a maximum of 4 cr hrs.

169.13 Tae Kwon Do I U 1
Beginning course in the Korean martial art form; includes etiquette, basic blocking, thrusting and kicking techniques, and self defense.

169.14 Tae Kwon Do II U 2
Continuation of Tae Kwon Do I, refinement of technique and form; introduction of intermediate forms and skills, breaking, and conditioning techniques.
2 2-hr cl. Prereq: 169.13.

169.16 T'ai Chi Ch'uan U 1
An introduction to T'ai Chi Ch'uan with emphasis on an exploration of body/energy awareness.
Repeatable to a maximum of 3 cr hrs.

169.17 T'ai Chi Ch'uan II U 2
Intermediate forms and techniques of T'ai Chi Ch'uan and experience in joint hands operation as well as in combat T'ai Chi Ch'uan.
2 lab hrs arr. Prereq: 169.06 or equiv. Not open to students with credit for 169.17.

169.18 T'ai Chi Ch'uan III U 2
Further development of the form practiced in T'ai Chi Ch'uan II; principles of breath control, mediation, and self massage are introduced.
2 2-hr cl. Prereq: 169.17. Repeatable to a maximum of 4 cr hrs.

**Racquetball**
Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.

170.01 Racquetball U 1
Beginning skills and knowledge for students with no prior experience in racquetball.
2 lab hrs arr.

170.02 Racquetball II U 1
Continuation of 170.01 with emphasis on strategy and the playing of singles.
2 lab hrs arr. Prereq: 170.01 or equiv.

170.03 Racquetball III U 2
Participation in both singles and doubles with emphasis on strategy and competition.
4 lab hrs arr. Prereq: 170.02 or equiv.

171.01 Rifle U 1
1 2-hr lab. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

171.02 Rifle II U 2
Introduction to target shooting techniques in the prone and standing positions.

171.02 Rifle III U 2
A continuation of 171.01 stressing the other shooting positions.
Prereq: 171.01.

171.03 International Air Pistol Target Shooting
Introduction to the sport of international air pistol shooting.
1 2-hr cl.

**Self Defense U 1**
Skills and understandings essential to defend oneself against an aggressor with emphasis on avoiding attack.
2 lab hrs arr.

174.01 Women's Soccer U 1
Techniques and knowledge essential for playing soccer.
2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.

174.02 Women's Soccer II U 1
174.03 Men's Soccer U 1
174.04 Men's Soccer II U 1

175.01 Women's Slo Pitch I U 1
175.02 Women's Slo Pitch II
175.06 Men's Slo Pitch I U 1
175.07 Men's Slo Pitch II
Prelab: Intermediate skills.

175.07 Slo Pitch II
Prelab: Intermediate skills.

176.01 Swimming I
Beginning swimming.
Open only to non-swimmers and students with no deep water experience.
This course is graded S/U.

176.02 Swimming II
Elementary swimming skills for those who can swim in deep water but no farther than 2 pool lengths (50 yards).

176.03 Swimming III
Intermediate skills for those who can swim at least 100 yards using the front crawl and at least 2 other strokes.
Prereq: 176.01 or equiv.

179.01 Skin and Scuba Diving U 3
Skills and knowledge essential for safe diving and preparation for open water checkout dives.
2 cl, 2 lab hrs arr. Prereq: Ability to swim 500 m in 10 min. Student must provide bathing suit and earplugs for required special scuba medical exam. See 139 and 140 for additional offerings.
180 Springboard Diving
Prereq: 178.02 or equiv. Repeatable to a maximum of 3 cr hrs; subdivisions not repeatable. Student must provide bathing suit.
180.01 Springboard Diving I U 1
Fundamentals of diving from the one meter (low) board.
2 lab hrs arr.
180.02 Springboard Diving II U 2
Intermediate diving skills.
4 lab hrs arr. Prereq: 180.01 or the ability to perform the following dives: front, back, inward, 1/2 twist, somersaults (front and back).
181 Synchronized Swimming U 1
2 lab hrs arr. Prereq: 178.03 or equiv. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable. Student must provide bathing suit.
181.01 Synchronized Swimming I
Skills necessary for basic synchronized swimming.

182 Life Saving and Water Safety
Repeatable to a maximum of 12 cr hrs; subdivisions are not repeatable. Student must provide bathing suit.
182.01 Lifeguarding and Water Safety Instructor Preparation U 1
Designed to meet course prerequisites for WSI and LGI.
2 hrs lab, arr. Prereq: 178.02 or equiv. This course is graded S/U.
182.02 Water Safety Instructor U 3
Designed to lead to certification as an American Red Cross Water Safety Instructor.
2 cl, 2 hrs lab, arr. Prereq: 182.01.
182.03 Adapted Aquatic Instructor U 2
Designed to lead to certification as an American Red Cross Adapted Aquatic Instructor.
1 cl, 12-hr lab. Prereq: Current ARC Water Safety Instructor's certificate or permission of the instructor.
182.04 Pool and Beach Operation U 3
Operational aspects including office and personnel, budgeting, public relations, recreation and safety, equipment operation and maintenance, water filtration, recirculation, and sanitation.
3 cl, Prereq: Unexpired ARC Water Safety Instructorship or concurrent registration in 182.02.
182.05 Lifeguarding Training I U 3
Designed to lead to ARC Lifeguarding and CPR for the Professional Rescue certification.
6 lab hrs, arr. Prereq: 178.03 or equiv.
182.06 Lifeguarding Instructor U 3
Designed to lead to ARC certification as Lifeguarding Training; Water Front Lifeguarding and Head Lifeguard Instructor with the potential to also become a water park Lifeguarding Instructor.
2 cl, 2 lab. Prereq: 182.01, 182.05, 182.15 or permission of instructor. Possible visitation to a water park facility.
182.16 Lifeguarding Training II U 2
A continuation of Lifeguarding Training I; this course will lead to certification in Water Front Lifeguarding and the Head Lifeguard Course with the potential to also be certified in Water Park Lifeguarding.
1 2-hr lab, arr. Prereq: 182.05.

183 Water Polo U 2
Introductory skills and knowledge essential in the sport of water polo.
4 lab hrs arr. Prereq: 178.03 or equiv. Student must provide bathing suit.

185 Table Tennis U 1
2 lab hrs arr. Repeatable to a maximum of 2 cr hrs; subdivisions not repeatable.
185.01 Table Tennis I
Beginning skills and knowledge essential for playing table tennis with emphasis on the use of backspin and topspin in the singles game.
185.02 Table Tennis II
Continuation of 185.01 with emphasis on advanced strokes and their application in the playing of singles and doubles.
Prereq: 185.01 or the ability to do backspin and topspin serves.

188 Tennis
Skills and knowledge essential in playing tennis.
Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable. Student must provide racket and 6 balls; advanced students should elect 631.10.
188.01 Tennis I U 1
Beginning skills: forehand, backhand, and serve—singles play.
2 lab hrs arr.
188.02 Tennis II U 1
Elementary skills; introduction to doubles play.
2 lab hrs arr. Prereq: 188.01 or equiv.
188.03 Tennis III U 2
Continuation of 188.02 with emphasis on playing strategy for both doubles and singles.
4 lab hrs arr. Prereq: 188.02
188.04 Intensive Tennis U 2

190 Acrosport
Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable.
190.04 Acrosport I U 1
Basic skills in tumbling, and hand balancing.
2 lab hrs.
190.05 Acrosport II U 2
Continuation of 190.04 with emphasis on routine construction for competition or exhibition.
4 lab hrs arr. Prereq: 190.04.

191 Volleyball U 2
4 lab hrs arr. Repeatable to a maximum of 4 cr hrs; subdivisions not repeatable. Advanced students should elect 631.14.
191.01 Volleyball I
Introduction to power volleyball.
191.02 Volleyball II
Continuation of power volleyball fundamental skill perfection and game strategies woven to produce an intermediate playing experience.
Prereq: 191.01 or equiv.

195 Yoga
Introduction to fundamental techniques and basic yogic principles of pranayama (breath control); asanas (posture), relaxation, and meditation; emphasis on major postures.
195.01 Yoga I U 1
2 lab hrs arr.
195.02 Yoga II U 1
Asanas (postures) at the intermediate level of Hatha yoga are introduced; continued development and practice of relaxation and meditative techniques; further exploration of yogic philosophy.
1 2-hr cl, Prereq: 195.01 or equiv.

196 Varsity Squads U 2
Participation as a player on a varsity squad.
6 lab hrs. Prereq: Admission by tryout. Repeatable to a maximum of 10 cr hrs in any combination of divisional subdivisions. These courses are graded S/U.
196.01 Baseball
196.02 Basketball
196.03 Cross Country
196.04 Fencing
196.05 Field Hockey
196.06 Football
196.07 Golf
196.08 Gymnastics
196.09 Ice Hockey
196.10 Lacrosse
196.11 Pistol
196.12 Rifle
196.13 Soccer
196.14 Softball
196.15 Swimming and Diving
196.16 Swimming (Synchronized)
196.17 Tennis
196.18 Track
196.19 Volleyball
196.20 Wrestling
196.21 Crew

197 Competitive Club Sports U 1
Participation as a member of a competitive club sport team.
3 lab hrs. Prereq: Prior experience on at least one competitive club sport team and good standing. Repeatable to a maximum of 3 cr hrs. Preregistration with dept. required. This course is graded S/U.

200 Health and Behavior U 5
Designed to establish a basis for positive health and efficiency through a consideration of various conditions and factors which affect health.
Au, Wi, Sp Qtrs. 5 hrs arr. Not open to students with credit for 103. Open only to students admitted to a major in PAES, Dental Hygiene or permission of instructor.

201 Current Concepts in Community Health U 3
A study of community health programs, the need for them, the problems and issues involved, and how these problems can be solved.
3 hrs arr.
204 Sexuality and Health U 3
The study of sexuality as an aspect of the healthy individual; the demystification of sexual beliefs and behaviors; sexual behavior and attitudes in young adults. 
3 hrs arr.

205 Social Recreation II 2
Age characteristics and developmental levels relative to social activities; techniques, rules, strategy and social behaviors in a range of cultural activities, i.e., social games and pastimes. 
2 cl. SS Admin Cond course. Not open to students with credit for HPER 200.

208 Orientation to Sport and Leisure Studies U 2
A general introduction to sport and leisure studies. Examination of the current scene, curricular opportunities, careers, and needed personal competencies. 
2 1/2 hr cl. Two observations in various sport and leisure settings.

209 Orientation to Exercise Science U 2
A general introduction to exercise science focusing on instrumentation; measurement, and training equipment. 
1 cl. 2-hrs clinical. Open only to students admitted to the Exercise Science program.

210 Orientation to Recreation and Leisure U 2
Designed to enable the prospective major to understand basic concepts, philosophies, and scopes of the recreation and leisure services field, and to assess individual potential as a recreation leader. 
2 cl, 1 lab. Not open to students with credit for Rec Ed 209.

221 Sports Officiating U 2
Study of playing rules, rule interpretation, techniques, and mechanics of officiating various interscholastic and intercollegiate athletic sports. 
2 cl. Prereq: Satisfactory evidence of playing skill in the elected athletic sport. Repeatable to a maximum of 12 cr hrs, subdivisions not repeatable. 
221.01 Baseball 
221.02 Basketball 
Students completing the course are eligible for certification to officiate in Ohio schools. 
221.04 Football 
Students completing the course are eligible for certification to officiate in Ohio schools. 
221.12 Wrestling 
Students completing the course are eligible for certification to officiate in Ohio schools. 
221.14 Volleyball 
221.15 Softball

245 Recreation Leadership U 3
Methods and materials for comprehensive programming with individuals and groups in a variety of recreation settings. 
2 1/2 hr cl. Prereq: 2 08, or HPER 209, 210, Rec Ed 209, or permission of instructor

250 How to Avoid Dying from Cancer Now and Later U 2
Discussion of the latest findings on avoiding cancer through lifestyle choices and assessment of one's family health history. 
1 2 hr cl.

251 Introduction to Exceptional Learners U 3
Overview of educational treatment and rehabilitation programs for individuals with senility, orthopedic, behavioral, and learning problems. 
Gardner. 
1 2 1/2 hr cl. Prereq: Written permission of instructor.

262 Coaching the Young Athlete U 3
Skills and knowledges essential to planning, coaching, and supervising competitive sports programs which are consistent with the needs of children. 
2 1/2 hr cl.

263 Special Issues Affecting Contemporary Student-Athletes U 3
An exploration of current topics and problems concerning collegiate athletes and the decision-making skills needed to facilitate college adjustment. 
2 1/2 hr cl.

270 Seminars in Career and Self Development U 3
Examination of self in relation to educational and career goals; self assessment, decision making, identification and use of campus resources, employability, and work adjustment skills. 
1 2 1/2 hr cl. Repeatable to a maximum of 12 cr hrs, including cr hrs in Ed-P & L 270.04; with a maximum of 3 cr hrs in any decimal subdivision. These courses are graded S/U.

270.01 Self-Career Development 
Designed to provide opportunities for self-exploration and skill development; exploration of and clarification of vocational and educational interests. 

270.02 Personal Growth to Increase Career Competencies 
Designed to provide opportunities to assist in self-exploration of and clarification for more effective development beyond the level of average performance.

270.03 Study Skills Related to Career Goals 
Designed to assist underachieving students with their efforts to ascertain and resolve the cause of low academic productivity; attitudinal and behavioral skills emphasized.

270.04 Career Development and Leadership Training in Higher Education 
Designed to explore possible careers in higher education and to conduct leadership training in terms of higher educational functions and organizations.

271 Seminar in Exploring Helping Relationships: Teaching/ Learning U 3
Focus on self development, decision making, world of work for students exploring careers through placement in educational, and community agency settings. 
1 3 hr cl. Repeatable to a maximum of 6 cr hrs with special written permission, when unusual circumstances warrant. To be taken concurrently with field experience 289.01.

289 Directed Field Experience U 2-5
Professional service in school or community settings. 
Pre-registration with school required. Repeatable to a maximum of 20 cr hrs.

289.01 Intro Experience in a School System 
289.02 Experience in a Community Agency 
289.03 Sport and Leisure Studies 
Open only to students admitted to a major in PAES or permission of instructor.

289.47 General Special Education

293 Sport and Exercise Science: Individual Study U 1-4
For individuals who wish to pursue special studies in work not normally offered in courses. 
Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Sport and Exercise Science: Group Study U 1-5
For groups of students who wish to pursue special studies. 
Arr. Prereq: Permission of dept required. Repeatable to a maximum of 10 cr hrs.

300 Health Education for Elementary Teachers U 3
The teacher's responsibility for health of school child; screening, referral, vision and hearing, nutritional problems, instructional needs, emergency care, and teaching health. 
3 hrs arr. Prereq: 103 and; admission to EDU. Not open to undergard minors or majors in phys ed or hth edu.

301 Field Sports U 3
Acquisition of performance skills in a variety of field sports, including rules, traditions, and values of the sports and their roles in various sport cultures. 
2-2 1/2 hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

302 Racquet Sports U 3
Acquisition of performance skills in a variety of racquet sports, including rules, traditions, and values of the sports and their roles in various sport cultures. 
2-2 1/2 hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

303 Individual Sports U 3
Acquisition of performance skills in a variety of individual sports, including rules, traditions, and values of the sports and their roles in various sport cultures. 
2-2 1/2 hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

304 Gymnastics U 3
Acquisition of performance skills in a variety of gymnastics activities, including rules, traditions, and values of gymnastics activities and their roles in various sport cultures. 
2-2 1/2 hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

305 Court Games U 3
Acquisition of performance skills in a variety of court games, including rules, traditions, and values of the games and their role in various sport cultures. 
2-2 1/2 hr cl. Open only to students admitted to a major in PAES or permission of the instructor.
312 Issues in Alcohol/Drug Use and Abuse U 3
Provides an understanding of the dynamics of substance abuse. 1 2½-hr cl.

314 AIDS: What Every College Student Should Know U 3
A review of the physiological, psychological, social, legal, and societal issues surrounding the disease AIDS with emphasis placed on responsible decision making about one's lifestyle. 1 2½-hr cl. Not open to students with credit for HPER 314 or Hist Edu 214.

360 Kinesiology U 4
A study of functional anatomy and biomechanics and their application to human movement.
3 cl.; 1 2-hr lab.

380 Exercise Physiology and Sport Performance U 5
Provide students with information and skills that will enhance their understanding of the principles of exercise physiology and athletic fitness, and to improve their ability to prepare athletes for competition. 4 1-hr cl., 1 2-hr lab. Not open to students with credit for 414 or 514. Open only to students with credit for a PAES major or the coaching education minor who have completed Zoology 232 or permission of instructor.

400 Basic Teaching Skills for Health Professionals U 3
Health-related teaching skills: development of learning objectives, use of different media and teaching strategies such as lecture, group process, and tutorial method.
2 2-hr cl. Prereq.: Enrollment in one of the health professions schools.

401 Fundamentals of Epidemiology and Biostatistics U 3
Introduction to factors affecting the distribution of health problems in populations and to disease causation.
3 cl. Prereq.: 201 or permission of instructor.

410 History of Leisure and Physical Activities in Western Society U 3
Examination of the evolution of leisure, recreation, and physical education as personal, cultural, and institutional activity. 2 1½-hr cl. Prereq.: 206 or permission of instructor.

414 Applied Physiology of Exercise U 4
In-depth examination of the effects of acute and chronic exercise on the human body.
3 cl., 1 2-hr lab. Prereq.: Physiol 310 and 311.

440 Recreation for Special Populations U 3
Introduction to recreation services for the aged, economically disadvantaged, youthful and adult offenders, and persons with physical or mental handicaps.
3 cl. Prereq.: 5 cr hrs in biological sciences and Hist Edu 200 or equiv. Open only to majors in recreation education.

489 Advanced Field Experience U 2-5
Directed teaching experience for advanced undergraduate students in Edu PAES. Open only to students admitted in a major in PAES having completed 601 or permission of the instructor. Requires preregistration with the department. Repeatable to a maximum of 50 credit hours.

489.05 Interscholastic Coaching U 2-5
Directed coaching experience. Open only to students admitted to a major in PAES or coaching education minor or permission of the instructor. SLS coaching strand prerequisites are 643, 657, 661.

489.09 Teaching in Physical Activity Settings U 2
Directed teaching experience for advanced undergraduates in Sport and Leisure Studies. Prereq.: 601 or permission of instructor. Open only to students admitted in a major in PAES. This course is graded S/U.

490 Fitness Program Development and Evaluation
490.10 Graded Exercise Testing U 3
Practical experience conducting graded exercise tests using treadmill and cycle ergometer.
8 hours of arranged practical experience/directed practice. Prereq.: 490.01.

490.11 Body Composition Evaluation U 2
Practical experience in the assessment of body composition using anthropometers and hydrostatic weighing procedures.
4 hours of arranged practical experience/directed practice.

490.12 Muscular Strength and Endurance U 2
Practical experience in assessing anaerobic power and strength using isokinetic and isotonic methods.
4 hours of arranged practical experience/directed practice.

490.13 General Fitness Evaluation U 2
Practical experience conducting fitness/wellness screening for campus community (students, faculty and staff).
4 hours of arranged practical experience/directed practice.

509 Sport and Leisure Service Delivery and Promotion U 3
The purpose of this course is to acquaint students with issues related to the promotion of sport and leisure services.
2 1½-hr cl. Open only to students admitted to a major in PAES or permission of instructor.

514 Applied Physiology of Exercise U 4
Continuation of 414.
3 2-hr cl., 1 2-hr lab. Prereq.: 414.

521 Sport Skill and Strategy Analysis U 3
Analysis and diagnosis of closed sport and movement skill performance.
2 1-hr cl., 2 2-hr lab. Open only to students admitted to a major in PAES or permission of instructor.

522 Sport Skill and Strategy Analysis U 3
Analysis and diagnosis of open sport and movement skill performance.
2 1-hr cl., 1 2-hr lab, Prereq.: 521. Open only to students admitted to a major in PAES or permission of instructor.

525 Promoting Behavior Change in Sport, Leisure and Exercise U 3
Introduction to behavior change strategies, to include the acquisition, maintenance, and generalization of behavior change useful in sport and exercise settings, and leisure activities.
3 1-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

531 Social Issues and Concerns in Sport, Leisure, and Exercise Behavior U 5
Examination of social and ethical issues such as discrimination, drug use, and the significance of the sport experience to individuals and sub-groups in the United States.
2 2-hr cl., 1 hr arr. Prereq.: Completion of first and second writing courses. Open only to students admitted to a major in PAES or permission of instructor. GECLAR course.

542 Lifespan Motor Development U 5
Physical growth, development, and motor behavior across the lifespan.
3 cl. and 2 2½-hr clinical experiences.

544 Sport and Leisure Perspectives for Special Populations U 3
Introduction to sport and leisure for persons with special needs across school, community, and clinical based programs.
2 2½-hr cl. Open only to students admitted to a major in PAES or permission of the instructor.

545 Programming in Sport and Recreation U 3
Examination of the development, organization, and implementation of programs and activities in sport, recreation, and leisure.
2 1½-hr cl. Prereq.: 246. Open only to students admitted to a major in PAES or permission of instructor.

550 Motor Development U 4
Study of developmental factors associated with motor skill acquisition throughout the lifespan.
4 cl. Prereq.: Phys ed major, exser sci major, or permission of the instructor. Not open to students with credit for 441.

573 Vocational-Technical Teaching
Development of basic cognitive and performance skills required to earn a one-year vocational certificate by nondegree vocational teachers. Prereq.: Current employment as a vocational teacher. Repeatable to a maximum of 24 cr hrs.

575.01 Preservice Program U 8
8 hrs/day for 20 days. This course is graded S/U.

575.02 Inservice I U 2
Prereq.: 575.01 or Ed-Stds 575.01.

575.03 Inservice II U 2
Prereq.: 575.02 or Ed-Stds 575.02.

575.04 Inservice III U 2
Prereq.: 575.03 or Ed-Stds 575.03.

575.05 Two Week Followup Program U 4
The refinement of curriculum development leadership and human relations skills required by employed, one-year certified vocational teachers.
8 hrs/day for 10 days. Prereq.: 575.04 or Ed-Stds 575.04. This course is graded S/U.

575.06 Vocational-Technical Teaching: In-Service IV U 1
The development and refinement of basic design and development skills required of a second year nondegree vocational teacher to earn a one-year vocational certificate.
575.07 Vocational-Technical Teaching: In-Service V U 1
Continuation of 575.06.
Arr. Prereq: 575.06.

575.08 Vocational-Technical Teaching: In-Service VI U 2
Continuation of 575.07.
Arr. Prereq: 575.07.

575.09 Vocational-Technical Teaching: Clinical Project U 3
Design and development of a clinical project that addresses a teacher's
cognitive or performance skills need for a nondegree vocational teacher
to earn a one-year vocational certificate.
Prereq: Employment as a Vocational Teacher.

587 Student Teaching in Health Education U 3-15
Observation, participation, and responsible teaching in a public school in
the greater Columbus area; individual and group conferences or seminars.
Prereq: 4th yr standing. Repeatable to the required 15 cr hrs. For
additional information, see the College of Education Bulletin. This course is
graded S/U.

589 Internship U 6-15
Directed and supervised experience in a professional setting.
Arr 30 hrs/wk. Prereq: Open only to students admitted to a major in PAES
with senior standing who have completed 289.03 or permission of instructor.
Preregistration with the school required. Repeatable to a maximum of 15
or hrs.

589.01 Exercise Science
This course is graded S/U.

589.02 Health Promotion
This course is graded S/U.

589.03 Sport and Leisure Studies
Prereq: Open only to students admitted to a major in PAES with senior
standing who have completed 289.03 or permission of instructor.

H599 Honors Course U 3-5
A program of accelerated study for students with special aptitudes.
Arr. Prereq: Enrollment in the honors achievement program and permission
of instructor. Repeatable to a maximum of 15 cr hrs.

General Prerequisite for Courses
Numbered 600 or 700
The minimal requirement for 600- and 700-level courses is junior standing.

600 Contemporary Issues in Sport and Leisure
Studies of relevant contemporary issues and trends in sport and leisure.

600.02 Sport and Social Values U G 2
Selected value-laden issues current in the conduct of American sport such as
the ethics of competition, equality and excellence, and the place of
athletics in education.
2 cr.

601 Teaching Sport, Leisure, and Exercise U 3
To introduce teaching and management skills associated with student
learning, design of instructional materials and techniques for
implementation, and strategies to teach diverse learners in various sport,
leisure, and exercise settings.
Open only to students admitted to a major in PAES or permission of the
instructor.

602 Personal Health Promotion U G 3
An advanced study of personal health promotion; extensive reading and
reporting in selected health areas.
3 hrs arr. Prereq: 200 or grad standing.

604 Education for Human Sexuality U G 3
Review of current information on health and sexuality for educators and
school personnel; consideration of the sex education curriculum, teaching
methods, materials, and controversy issues.
3 hrs arr. Prereq: 200, 636 or equiv, Sociol 330, or permission of instructor.

605 Health Counseling U G 3
To provide educators and counselors opportunity to develop skills and
knowledge to advise students and clients confronted with personal health
concerns.
3 hrs arr. Prereq: 5 hrs of psych; admission to EDU.

607 Legal Aspects of Sport and Physical Activity U 4
Development of a responsible and safe attitude toward sport programming;
identification of procedures to reduce the probability of injuries/suitcases
resulting from sport and physical activity.
2 2-hr cl. Prereq: Jr standing. Open only to students admitted to a PAES
major, the coaching education minor, or permission of instructor.

609 Evolution of Vocational Education U G 3
Introduction to the development of vocational education including
consideration of influences affecting legislation, federal acts, and basic
concepts which have evolved.
1 2-hr cl. Prereq: Permission of instructor. Not open to students with
credit for Ed-Stds 609.

612 Alcohol and Drug Education U G 3
The study and development of techniques and programs to prevent or
reduce psycho-social problems associated with drug misuse.
1 3-hr cl or 2 2 1/2-hr cl. Prereq: 636 or permission of instructor.

620 Coaching of Athletic Sports
Study in the theory, strategy, and mechanics of coaching various
interscholastic; intercollegiate athletic sports.
2 cl. 2 lab hrs. Prereq: Advanced skill level in the elected sport, jr standing
and permission of instructor. Repeatable to a maximum of 18 or hrs;
subdivisions not repeatable, except 620.09.

620.01 Baseball U G 3
620.02 Basketball U G 3
620.04 Football U G 3
620.05 Gymnastics U G 3
620.06 Golf U G 2
620.08 Soccer U G 3
620.09 Aquatics U G 3
620.10 Tennis U G 2
620.11 Track and Field U G 3
620.12 Wrestling U G 2
620.14 Volleyball U G 2

622 Business Technology Education I U G 5
The relationship of business technology to business education subjects is
discussed; foundational understanding and skill/application development
in business education subjects.
1 3-hr cl, 2-hr clinical. Prereq: 624 or Ed-Stds 620.

623 Business Technology Education II U G 5
Advanced applications of business technology to business education
subjects; planning classroom instruction, policy, followup evaluations are
discussed; field-based experiences in business and educational settings.
1 3-hr cl, 2-hr lab. Prereq: 622 or Ed-Stds 622.

624 Foundations of Vocational Education U G 4
Role of a vocational teacher and an investigation of the theories reflective
of vocational instruction.
1 2-hr cl, 2-hr clinical. Prereq: Upper-division admission to Business
Teacher Education Program.

625 History of Physical Education and Sports in the United
States U G 3
The development of physical education and sports in the United States
from colonial times to the present and the factors which have affected their
growth.
1 3-hr cl.

626 Sport and Popular Culture Series U G 3
A variety of themes present in selected popular culture forms dealing with
a variety of sports such as football, basketball, baseball, and track and
field.
1 1-hr cl, 1 1-hr cl.

626.01 Sport and Popular Culture Overview
626.02 Sport and Popular Culture - Race and Gender
Prereq: 626.01 or permission of instructor.

626.03* Sport and Popular Culture - Baseball
Focus on baseball as it has appeared in film and literature of and about
the early 1900's to the present day.
Prereq: 626.01 or permission of instructor.

628 Clinical Internship
20 hrs minimum equal 1 cr. hr. Prereq: EDP students with a CPHR of 2.50
or above, or grad students in good standing.

628.01 Classroom Observations U G 3-15
Observation of vocational and technical classroom instruction in field-
based educational setting.
Repeatable to a maximum of 15 cr hrs.

628.02 Experience in Business U G 3-6
Practical experience in a private sector setting to gain knowledge of
an industry and to develop new skills and knowledge.
Repeatable to a maximum of 6 cr hrs.

628.03 Teacher Aide U G 4-8
Practical experience as a professor's aide in a summer teacher
certification training clinic or workshop.
Repeatable to a maximum of 8 cr hrs.
Education: Physical Activity and Educational Services

629 Advanced Teaching Internship U G 15
Responsible and intensive teaching in an approved field-based school setting; teaching styles are practiced under supervision of a career professional, with continual follow-up conferences, seminars. 2-hr cr., 15 hrs field experience. Prereq: Permission of instructor and satisfactory completion of 628 or EDAH 629

630 Problems in Intramural Sports U G 2
A critical analysis of intramural sports programs; problems of policy and administration of programs on the elementary, secondary, and college levels will be studied. 1 2-hr cr.

631 Advanced Skill Techniques U G 2
Advanced techniques of performance and a specialized and intense study of appropriate technical literature. 4 1-hr labs. Prereq: Advanced skill level, jr standing and permission of instructor. Repeatable to a maximum of 10 or hrs. Subdivisions not repeatable except 631.20.

631.02 Basketball
This course will assist students in acquiring advanced performance skills and strategies in basketball. Prereq: 144 or HPER 144.

631.04 Football
This course will assist students in acquiring advanced performance skills and strategies in flag/touch football. 2 2-hr cr. Prereq: 156.03 or equiv.

631.05 Gymnastics
631.06 Golf
631.08 Soccer
This course will assist students in acquiring advanced performance skills and strategies in soccer. Prereq: 174 or HPER 174.

631.10 Tennis
631.14 Volleyball
631.15 Softball
2 2-hr cr. Prereq: 175 or HPER 175 or equiv.

631.20 Special Offerings

632 Software Applications for Business/Industry Teachers and Trainers U G 5
Business/industry-oriented foundation to microcomputer applications frequently used by trainers and vocational teachers. 3 2-hr cr., 2-hr lab. Prereq: 622 or Ed-Stds 622 and Cptr/Inf 100.

633 Instructional Strategies for Vocational Work Experience Programs U G 3
Preparation and delivery of lessons, placement, and follow-up of students on-the-job. 1 2½-hr cr. Prereq: Ed major. Not open to students with credit for Ed-Stds 631.

635 School Health Services U G 3
Consideration of healthful school living and health services, including health appraisal, counseling, educational adjustments, communicable diseases, and emergency programs. 3 hrs arr. Prereq: 200 or equiv. For majors and minors in health sciences and health education. Not open to students with credit for HPER 635.

636 Teaching of Health U G 5
Principles, methods, materials, and resources involved in teaching health; direct, correlated, and integrated curriculum patterns; individual teaching experience. 5 hrs arr. Prereq: 635. Not open to students with credit for HPER 636.

637 Health Agencies U G 5
Health agencies: purposes, location, affiliations, sources of funding, staff responsibilities, volunteer opportunities, services, educational materials, and media, with emphasis on writing materials. 2 2½-hr cr. Prereq: Health Education majors or permission of instructor. Not open to students with credit for HPER 637. GEC course.

640 Designing a Movement Arts Curriculum for Children U G 3
Movement arts education and strategies for designing and implementing a movement arts curriculum for children. 1 2½-hr cr., and 8 2-hr cr. Students may concurrently and in ensuing quarters enroll in 633 and 889 to continue developing and field testing a 4M program in schools under University supervision.

643 Coaching Effectiveness U G 4
Introduction to the teaching/learning process with emphasis on pedagogical skills necessary for coaching effectiveness. 2 2-hr cr. Prereq: Major in Edu PAES, coaching education minor or 262 if in SLS program or permission of instructor.

646 Coordination of Cooperative Vocational-Technical Education Programs U G 3
Designed to develop the knowledges, attitudes, and competencies to operate effectively a cooperative vocational-technical education program. 1 2½-hr cr. Prereq: Not open to students with credit for Ed-Stds 646.

648 Adult Literacy Education U G 3
Historical/social context of current adult basic education issues and practices related to participation, instructional processes, program planning, evaluation, and research needs. 1 3-hr cr.

649 General Methods in Adult Education U G 3
Selection, integration, and evaluation of methods, techniques, and devices to facilitate the learning of adults. 1 2½-hr cr. Not open to students with credit for Ed-Stds 649.

650 Introduction to Exceptional Children U G 3
An overview of the education of exceptional learners including a discussion of their characteristics and a review of historical approaches to their education and of contemporary educational practices. Ward. Not open to students with credit for Psych 570.

651 Health Program Planning U G 5
Competency development in formulating and implementing health programs; includes understanding community organization and the health care system, administration, and sustaining programs. 2 2½-hr cr. Prereq: 201 or permission of instructor.

652 Health Promotion in the Workplace U G 3
Theoretical and pragmatic aspects of conducting health promotion programs in the workplace; discussion of rationale and relative effectiveness of various health components. 1 2½-hr cr. Prereq: Sr standing or above. Not open to students with credit for HPER 652.

654 The Group and Individual in Sport U G 3
An overview of psycho-social factors as they interact with the sport participation of individuals and groups. 2 1½-hr cr.

655 Shop and Laboratory Organization and Management U G 3
Designed to help vocational and technical teachers to plan, organize, and manage vocational shops and technical laboratories used in various educational settings. 1 2½-hr cr. Not open to students with credit for Ed-Stds 655.

657 Sport and Disability U G 3
Overview of sport for individuals with disabilities with special emphasis given to physiological, psychological, and socio-cultural perspectives. Au Ctr. 2 1½-hr cr. Prereq: Acceptance into the Sport and Exercise Studies graduate program or undergard major in Edu PAES or coaching education minor or permission of instructor.

660 Laboratories in Exercise Physiology U G 1
Selected laboratory experiences in the field of exercise science. 1 2-hr lab. Subdivisions are not repeatable.

660.01 Introductory Labs in Exercise Physiology
Selected laboratory experiences to include cardiovascular and muscle function testing. To be taken concurrently with 665.

660.02 Intermediate Laboratories in Exercise Physiology
Selected laboratory experiences to include cardiovascular and muscle function testing.
Prereq: 660.01 or equiv.

660.03 Advanced Laboratories in Exercise Physiology
Selected laboratory experiences to include cardiovascular and muscle function testing.
Prereq: 660.02 or equiv.

661 Care and Prevention of Athletic Injuries U G 5
A consideration of the methods of prevention and care of injuries, conditioning of athletes and safety provisions for the conduct of physical education. 3 2-hr labs. Prereq: 360. Open only to students admitted to a major in Edu PAES, physiotherapy or coaching education minor or permission of instructor.

662 Determining Instructional Content of Technical-Skill Training Programs U G 3
Systematic investigation of data collection and analysis procedures used to determine the content of technical skill jobs. 1 2½-hr cr.
663 Organizing Technical-Skill Training Programs U G 3-5
Investigation of processes used to prepare objectives, evaluate items and budgets, and select and sequence appropriate strategies. 2/8-hr discussion with optional 4 hrs of clinical activities per week. Prereq: 662 and ED-P&L 600.

664 Development of Technical-Skill Training Materials U G 3
Development and preparation of instructional materials that require an understanding of an industry, ability to use text-publishing software, and use of critical writing skills. Prereq: 662 and 663, and ED-P&L 600.

665 Making Effective Technical-Skill Presentations U G 4
Delivery strategies used to present technical and skill information to groups of learners. Au Qtr. Prereq: 662, 663, and 664.

666 Development of Course of Study or Curriculum Guide U G 3
Investigation of essential elements necessary to develop a course of study or curriculum guide. 1 2/8-hr cl. Prereq: 662, 663, and 664; or 575; or 668.

667 Essentials of Vocational Curriculum and Instruction U G 3
Study of literature on curriculum and instruction used to prepare future employees, upgrade current employees, and prepare for changes in technology. 2/8-hr cl. Prereq: 662, 663, and 664.

668 Vocational Teacher Certification Clinics
Prereq: Employment as a vocational teacher with a one-year temporary certificate.

668.01 Clinic 1 G 8
Development of basic cognitive and performance skills required to earn a one-year vocational certificate by new vocational teachers. 5 8-hr cl for 4 weeks. This course is graded S/U.

668.02 Clinic 2 G 2
Supervised clinical work while teaching in a vocational program. 3 hrs clinical. Prereq: 668.01.

668.03 Clinic 3 G 2
Continuation of 668.02. 3 hrs clinical. Prereq: 668.02.

668.04 Clinic 4 G 2
Continuation of 668.03. 3 hrs clinical. Prereq: 668.03.

668.05 Clinic 5 G 4
Refinement of curriculum development skills and the development of leadership and human relations skills required by employed, one-year certified vocational teachers. 5 8-hr cl for two yrs. Prereq: 668.04.

668.06 Clinic 6 G 1
Development and refinement of basic curriculum design and development skills required of a second-year vocational teacher-1 hr clinical. Prereq: 668.05.

668.07 Clinic 7 G 1
Continuation of 668.06. 1 hr clinical. Prereq: 668.06.

668.08 Clinic 8 G 1
Continuation of 668.07. 1 hr clinical. Prereq: 668.07.

668.09 Clinic Project G 3
Design and development of a clinical project that addresses a vocational teacher's cognitive or performance skill necessary to earn a one-year vocational certificate.

669 Teaching Students with Disabilities in Inclusive Settings U G 3
Emphasizes practical, low-cost, empirically supported, and classroom tested approaches to teach students with disabilities effectively in general education classrooms. Heron. 1 2/8-hr cl. Prereq: Permission of instructor. Not open to students with credit for Ed-SAR 665.

670 Remedial and Clinical Reading Instruction U G 3
An overview of remedial and clinical reading instruction and assessment. 1 2/8-hr cl. Not open to students with credit for Edu-T&L 670. Cross-listed in Edu-T&L.

671 Clinical Practice in Treating Reading Disabilities U G 3
Use of test materials in the diagnosis of reading disabilities; practice with remedial procedures. Mc Cormick and Paul. 1 2-hr cl, 3 1-hr lab arr. Prereq: Ed-T&P 732 and permission of instructor. Not open to students with credit for Ed-T&L 671. Cross-listed in Edu-T&L.

672 Adult Learning in Society U G 3

673 Parent Education U G 3
Nature, extent, and significance of the parent education movement; home and school relationships; methods and resources; training professionals and lay leaders; local and state programs. 1 2/8-hr cl. Prereq: 4th yr standing; for EDU majors.

674 Continuing Education in the Retirement Years U G 3
Designed to provide knowledge about older adults learning needs, available resources, and pertinent legislation; emphasis on helping older learners contribute positively to society. Bogg. 1 2/8-hr cl. Prereq: Permission of instructor for undergrad.

675 Programming for Severe Physical Impairments U G 3
Background information and survey of programmatic considerations related to physical, motor, and fitness training of the severely handicapped. 1 2/8-hr cl.

677 The Parent/Professional Partnership U G 3
Knowledge and skills necessary for educators to assist parents in facilitating the development, education, and socialization of children and youth and handicaps. 1 2/8-hr cl. Prereq: Permission of instructor.

681 Advanced Athletic Training U G 3
Orthopedic evaluation of musculoskeletal athletic injuries; the theory and interpretation of assessment techniques and their application in the field of Sports Medicine. 2-hr lecture, 2-hr lab. Prereq: 661 and permission of instructor.

685 Adult Exercise Program — Implementation U G 3
Introduction to adult exercise program and evaluation methods; emphasis on the implementation of programs for the normal healthy adult. 3 cl. Prereq: 380 or 414. To be taken concurrently with 660.01.

686 Exercise Training for Fitness and Cardiac Rehabilitation U G 3
Continuation of 685; exercise testing for special populations; cardiac rehabilitation procedures; preventive exercise training programs. 3 cl. Prereq: 685.

692 Workshops U G 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. Cl hrs arr. Prereq: Written permission of workshop director. Repeatable with more than 4 workshops to a maximum of 12 cr hrs.

692.10 Special Education
692.20 Sport and Exercise Sciences
692.25 Rehabilitation Services
692.30 Wellness and Human Services
692.34 Counselor Education
692.40 Workforce Educ. and Lifelong Learning
692.63 School Psychology

693 Individual Studies U G 1-4
Prereq: Permission of instructor. A total of not more than 30 cr hrs of any 693 will apply toward graduation for undergrad students. For plan A, not more than 15 cr hrs of any 693 and/or 893 will apply toward the master's degree; for Plan B, not more than 20 cr hrs will apply. Not more than 30 cr hrs will apply toward the doctoral degree. These courses are graded S/U.

693.10 Special Education
693.20 Sport and Exercise Sciences
693.25 Rehabilitation Services
693.30 Wellness and Human Services
693.34 Counselor Education
693.40 Workforce Educ. and Lifelong Learning
693.63 School Psychology

694 Group Studies U G 1-5
Group studies on special problems in education. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs in Ed-T&L. 694.
694.10 Special Education
694.20 Sport and Exercise Sciences
694.25 Rehabilitation Services
694.30 Wellness and Human Services
694.34 Counselor Education
694.40 Workforce Educ. and Lifelong Learning
694.63 School Psychology

697 Foreign Study U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that experience.
Avr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 12 cr hrs, with not more than 4 workshops, including hrs earned in HPER 697. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.
698.01 Domestic
698.02 Foreign

700 Interprofessional Education
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.
Repeatable to a maximum of 9 cr hrs, subdivisions are not repeatable except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work and theology. Cross-listed in Ed Policy & Leadership, Ed-Theory & Learning, and Ed-Physical Activity and Educational Services.
700.01 Seminar of Interprofessional Care U G 3
Treatment of the whole person through the analysis of the interrelated problems of actual cases.
700.02 Changing Societal Values U G 3
Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.
700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3
Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.
700.04 Interprofessional Practicum in Clinical Settings U G 3 or S
Interprofessional teamwork in clinical settings.
Prereq: Permission of instructor.
700.05 Interprofessional Seminar in Policy Analysis U G 3
Explores interprofessionally to history, formation, and implementation of public policy issues of significance to helping professions.
3 cr. Prereq: Permission of instructor.
700.06 Care of Chemically Dependent Families U G 3
Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.
700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3
Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.
1 2-1/2 hr cr. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

702 Health After 60 U G 3
Designed to develop an awareness of the health concerns of the elderly and a willingness to help improve their quality of life.
1 3-hr cr. Prereq: 4th yr standing in a health science or behavioral science area or permission of instructor.

705 Teaching Gifted Students—Educational and Psychological Approaches G 2
An examination of historical trends, educational, psychological, and philosophical factors in the education of gifted persons.
1 2-1/2 hr cr. Prereq: 650 or permission of the instructor.

706 Professional Transition to Teaching in Physical Education G 2
Curricular issues and concerns related to the demands of an intern beginning the transition to teaching; teachers' rights and responsibilities.
1 2-hr cr. Prereq: Admission to M.Ed. program.

707 Professional Issues for Prospective Physical Educators G 2
Alternative models of education and critiques existing in P.E. programs; impact of social issues on teachers' professional lives.
1 2-hr cr. Prereq: 706, 740, and 706.

708 Analysis of Teaching and Learning Processes G 3
Techniques for defining, observing, and assessing teaching/learning processes with emphasis on verifying relationships between teaching strategies and student outcomes.
2 1-1/2 hr cr. Prereq: Admission to M.Ed. program. Not open to students with credit for 971.

709 Curriculum and Instructional Design G 3
Systematic planning and design of the curriculum and its implementation using principles of instructional design and evaluation.
2 1-1/2 hr cr. Prereq: Admission to M.Ed. program.

710 Management of Sport and Special Events G 3
Provides a comprehensive knowledge of the planning and management of sport and special events.

712 Early Intervention for Children with Disabilities U G 3
Study of education of infants and preschool children with disabilities emphasizing model programs with an interdisciplinary focus. Sainato.
1 2-hr cr. 2-hr field-based experience. Prereq: An introductory course in special ed (251, 651, or equiv.), a course in child dev (Fm&Hu Dy 361), or the family (Fm&Hu Dy 380, Socol 430, or equiv). Not open to students with credit for Ed-S&R 712.

714 Responses and Adaptations to Exercise U G 5
Study of responses and adaptations to the stress of exercise in humans and animals.
5 cr. Prereq: 10 cr hrs physiol or 10 cr hrs chem or 10 cr hrs biology, or equiv.

715 Education of Students with Physical, Sensory, and Multiple Disabilities U G 3
Study of the education and habilitation of children and adults with physical, sensory, or multiple disabilities including individuals with severe and profound retardation and autistic-like characteristics.
1 2-1/2 hr cr. Prereq: 251 or 650 or equiv.

717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities.

717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
1 3-hr cr. Not open to students with credit in 717.01 in any cross-listed areas.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues
Investigation and critical examination of function of interdisciplinarity and administrative teams in mental retardation and developmental disabilities.
1 2-hr cr. Not open to students with credit in 717.02 in any cross-listed areas.

717.03 Developmental Disabilities G 3
Focus on the most pertinent scientific and societal issues of developmental disabilities.
1 3-hr cr. Not open to students with credit for 717.03 in any of the cross-listed areas. Cross-listed in Allied Medicine, Human Nutrition and Food Management, Psychology, and Social Work.

718 Education of Mildly-Disabled Children and Adults U G 3
Overview of problems, issues, and practices in educating children and adults with developmental, learning, and behavior disabilities. Sainato.
1 2-1/2 hr cr.

723 Elementary School Physical Education G 2
Methods and materials of elementary school physical education dealing with the selection, instruction, and evaluation of elementary physical education activities.
5 4-hr cr for 20 hrs total. Prereq: Admission into the Early-middle Childhood Education M.Ed. program.

724 Elementary School Health Education G 3
Health appraisal of the school aged child and teaching methods dealing with instruction and evaluation of Health Education.
10 3-hr sessions for a total of 30 hrs. Prereq: Grad standing or permission of instructor. Acceptance to the Early-middle Childhood Education M.Ed. program.
118 Education: Physical Activity and Educational Services

725 Advanced Educational Procedures and Programming for Moderately, Severely, and Profoundly Handicapped U G 3
Procedures and programming for moderately, severely, and profoundly handicapped children; review of teaching strategies, curriculum and development, and eight major curriculum areas for educational programming.
Prereq: 742 or written permission of instructor. Repeatable to a maximum of 6 cr hrs.

725 Changing Physical Activity Behavior G 3
Introduction to the theoretical foundations, research base, and intervention strategies for enhancing exercise participation in fitness and recreational settings.
1 2 1/2-hr cl.

727 Special Topics in Education P G 1-5
Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.
Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
727.10 Special Education
727.20 Sport and Exercise Sciences
727.25 Rehabilitation Services
727.30 Wellness and Human Services
727.34 Counselor Education
727.40 Workforce Education and Lifelong Learning
727.63 School Psychology

728 Cultural Diversity: Developing a Multicultural Perspective G 3
Students will have the opportunity to develop a multicultural awareness as they explore the impact of an increasingly diverse society in the United States. Miranda.
1 21 2/3-hr cl. Prereq: Grad level status and permission of instructor.

732 Current Topics in Sport and Exercise Management G 2
Examines the areas of specialization within sport management and current issues relative to the field.
1 2-hr cl. Prereq: Permission of instructor or enrollment in sport and exercise sciences.

733 Financing Sport Operations G 3
This course examines the application of basic concepts of public and private sector financing to collegiate and professional sport organizations.
2 1 1/3-hr cl. Prereq: Sport Management major or permission of instructor.

740 Teaching Physical Education in the Elementary School G 5
Effective strategies for teaching physical education in the elementary school
4 hrs cl for the first 15 days of the qtr. Prereq: Admission to the M.Ed. certification program.

741 Teaching Physical Education in Middle and High School G 5
Teaching and curricular issues as they relate to middle and high school physical education programming.
4 hrs daily for 15 days. Prereq: 706, 740, and 786.

742 Applied Behavior Analysis for Teachers U G 3
Study of principles of behavior for the development and maintenance of academic and social behaviors.

743 Educational Assessment of Exceptional Learners U G 3
Examination of issues and procedures associated with planning, conducting, scoring, and interpreting educational assessments.
1 2 1/2-hr cl. Prereq: 251 and 650 or equiv.

746 Behavioral Consultation in School, Clinic, and Home Settings U G 3
Focuses on providing behavioral consultation to regular and special education teachers, administrators, students, and parents; analyses the development, implementation, and evaluation of consultation programs in school, clinic, and home settings.

748 Curriculum and Instructional Strategies for Students with Mild Disabilities U G 3
Content of the curriculum, instructional strategies, media, materials, and technologies for teaching students with mild disabilities and of different ages and cultural backgrounds.
5 cl. 10 hrs practicum. Prereq: Written permission of instructor.

749 Instructional Methods for the Transition of Secondary School Students with Disabilities U G 3
Study of the application of teaching techniques and materials for the education of secondary school students with disabilities.
1 2 1/3-hr cl. 20 hrs practicum. Prereq: Written permission of instructor.

750 Teaching Social Behavior to Students with Disabilities U G 3
Nature of social skills, importance of social skills planning in the curriculum, and the special social-skill needs of learners with disabilities.
1 2 1/3-hr cl. Prereq: Permission of instructor.

751 Advanced Educational Procedures for Learning Disabled Students U G 6
Develops advanced training in learning strategies and individualized curricula for elementary and secondary students with specific learning disabilities.
1 2 1/3-hr cl, 3-hr practicum, 6 hrs arr. Prereq: 650, Ed-S/R 650 and permission of instructor.

752 Crisis Intervention and Instructional Management of SHB U G 6
Examination of the problems, issues, and practices relative to educating children with severe behavior disorders.
1 2 1/3-hr cl, 6 hrs field work, arr. Prereq: Permission of instructor.

753 Teaching in the Allied Health Professions G 3
Principles and practice of teaching the allied health professions; focuses on various teaching roles and strategies of allied health professionals in academic and clinical settings.
1 3-hr cl. Prereq: Permission of instructor.

754 Physical Growth and Motor Development U G 3
Study of growth in phylogenetic and ontogenetic sequence; motor development; critical analysis of research in motor ability, fitness, and athletics, as related to growth and development.
3 cl. Prereq: Grad standing, or permission of instructor.

755 Inclusion in Sport and Exercise Education G 3
Designed to familiarize teachers and other professionals with inclusion/integration in Sport and Exercise Education.
1 3-hr cl. Prereq: 544 or equiv. Required for grad students in Sport and Exercise Education.

757 Aspects of Training and Development in Vocational Education G 3
Overview of theoretical frameworks and practices related to training and development in vocational education; specific job roles of educational specialists will also be examined.
1 2 1/2-hr cl.

758 Applications of Statistical Quality Control to Vocational Education and Training U G 3
An examination of current statistical quality control theory and practice applied to education and business/industry training.
1 3-hr cl. Prereq: 834 or permission of instructor.

759 Mechanical Analysis of Motor Skills U G 3
The application of mechanical laws, principles, and formule to motor skills.
3 cl. Prereq: 360 or equiv., and Physics 111, or permission of instructor.

762 Motor and Physical Assessment of Children with Handicapping Conditions U G 3
Survey of validity data on the most used assessment tools and practices in collecting motor and physical performance data on children with handicapping conditions.
1 3-hr cl. Prereq: 850, and 662 or Ed S/R 651.

764 Planning and Implementing Instruction for Generalized Outcomes U G 3
Examination of guiding principles and operational procedures for designing and implementing instructional programs that promote the generality of newly learned skills.
1 2 1/3-hr cl. Prereq: 742 and permission of instructor.

765 Grant Writing G 3
Analysis of how applications for external funding in the School of Health, Physical Education, and Recreation are developed and submitted.
1 3-hr cl. Prereq: Permission of instructor.

767 Assessment in Counseling; Instrumentation G 3
An introduction to the concepts and techniques in the appraisal of the individual with an emphasis on basic statistical concepts, and an overview of the instrumentation; designed for counselors who will be working in school, mental health, and rehabilitation settings.
1 2 1/2-hr cl. Prereq: 773 or permission of instructor.
768 Assessment in Counseling: Interpretation U G 3
A continuation of 767 involving a more advanced study of concepts and techniques in the appraisal of the individual with an emphasis on the development of case studies, and interpretation of standardized and non-standardized assessment instruments; designed for counselors who will be working in school, mental health, and rehabilitation settings.
1 2/1-2/hr cl. Prereq: 767.

771 Exceptional Children: Assessment and Instruction U G 5
Academic and social assessment and instruction of children with learning disabilities and behavioral disorders in a clinic setting.
3 cl. 3 lab. Prereq: Permission of instructor.

772 Applying Behavioral Approaches in the Classroom U G 3
Classroom management problems, classroom engineering, assessment for teaching and roles of key people in a behavioral model designed for children with learning and behavior disorders.
1 2/1-2/hr cl. Prereq: 742.

773 Counseling Services and Techniques U G 3
Counseling services and techniques used to help individuals live and work effectively in a complex society.

774 Introduction to Counseling U G 3
Introduction to counseling theories with emphasis on theoretical bases and applications in selected school and community settings.
2 2/1-2/hr cl. Prereq: 773.

775 Group Counseling U G 3
An overview of theories, issues, and trends of group counseling.
1 2/1-2/hr cl. Prereq: Permission of instructor.

776 Counseling Children U G 3
An overview of child behavior and concerns with emphasis on counseling theory as applied to children and general treatment modalities.
1 2/1-2/hr cl.

779 Educational and Career Counseling U G 5
Theories, instruments, and resources for educational and career counseling of individuals and groups.
1 2/1-2/hr cl, 2-3 hr. lab. 20 clinical hrs. Prereq: 768 and written permission of instructor.

785 Organization and Administration of Public Recreation U G 3
Consideration of common patterns of organization and conduct recreation activities found in American cities, large and small, under municipal, school, and other auspices.
2 1/1-2/hr cl. Prereq: 245, 545; Edu PAES major or permission of instructor. Sr standing or above.

786 Internship in Physical Education at the Elementary School G 8
Observation, participation, and responsible teaching in an elementary school setting.
6 hrs daily for the last 40 days of the quarter. Prereq: 740 and admission to the M.Ed. in PER in, or by permission of instructor.

787 Internship in Secondary Physical Education G 8
Observation, analysis, and teaching in a public secondary school; dual and three-way conferences with supervisor and cooperating teacher.
8 hrs daily for the last 40 days of the quarter. Prereq: 706 and 786. M.Ed. standing or by permission of the instructor.

788 Practicum for School Nurses U G 3-15
A supervised opportunity is provided to practice the school nursing specialty in a public school health services setting.
1 cont per wk; hrs of field exp varies with cr hrs. Prereq: Written permission of area advisor. Limited to student nurses and RN's with courses required for school nurse certification. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

789 Practicum in Health Education U G 2-15
Opportunity is provided for putting educational research and theory into practice by teaching, administration, and agency experience under supervision in university, school, and agency situations.
1 cr cont and on field exp. Prereq: Written permission of instructor; and departmental advisor based on substantiated evidence of appropriate knowledge and skill in the selected course. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

790 Principles and Practices of Rehabilitation Counseling U G 3
Orientation to the vocational rehabilitation process; a survey of principles, history, philosophies, legislation, and techniques.
1 2/1-2/hr cl. Prereq: Permission of instructor.

791 Orientation to Disabling Conditions U G 3
An overview of major disabling conditions focusing on: etiology, treatment, and prognosis; physical restoration; the vocational and functional limitations created by the conditions.
1 2/1-2/hr cl. Prereq: Permission of instructor.

792 Job Placement and Job Development for Persons with Disabilities U G 3
An analysis of the theories and techniques involved in vocational counseling, job restructuring, and job development with the disabled worker; an introduction to models of interagency linkage and cooperation.
1 2/1-2/hr cl. Prereq: 790 and permission of instructor.

795 Multicultural Perspectives in Teaching Sport and Physical Activity Classes G 3
Described for students to develop a multicultural perspective in understanding the teaching-learning process; especially in sport and physical activity classes.
2 2-2/hr cl. Prereq: Grad standing in Sport and Exercise Sciences. Recommended for all new GTA's in Sport and Exercise Sciences.

800 Counseling: Practica in Basic Helping Skills G 2
Provides the experiential component of 774: Introduction to Counseling and 775: Group Process.
1 2/hr cl. These courses are graded S/U.

900.01 Individual Counseling G 3
Intensive training in basic interviewing and counseling skills with a focus on self-assessment, and on increasing one's understanding of the complexities of interpersonal processes.
Prereq: 774 or equiv and/or permission of instructor.

900.02 Group Counseling G 3
An opportunity to experience the group process from a member's perspective, and to observe the role and function of a group facilitator.
Prereq: 775 or equiv and/or permission of instructor.

801 Multiculturalism and Counseling G 3
Explores cultural-specific issues and their impact on counseling.
801.01 Multicultural Issues in Counseling G 3
An exploration of multicultural concerns related to the knowledge, belief/attitudes, and skills of counselors.
Prereq: 774 or permission of instructor.

801.02 Multicultural Research in Counseling G 3
An examination of multicultural research design and methodology, and the impact these findings have on counseling.
Prereq: ED P&L785 and/or ED P&L 786 or their equivalents.

802 Exercise Physiology G 4

802.01 Introduction to Exercise Physiology G 4
Introduction to the field of exercise physiology with emphasis on energy liberation factors affecting performance, health, and illness and physical training.
2 2/hr cl. Prereq: Physiol 602 or equiv.

802.02 Exercise Physiology: Metabolism, Temperature, Water, and Electrolyte Balances G 4
Continuation of 802.01; discussion of metabolism, temperature, water, and electrolyte balances during exercise and of the effects of physical training.
2 2/hr cl. Prereq: 802.01 and permission of instructor.

802.03 Exercise Physiology: Cardio-respiratory System, Physical Training, and Muscular Strength Training G 4
Continuation of 802.02; discussion of the exercise system and muscular strength training.
2 2/hr cl. Prereq: 802.02 and permission of instructor.

802.04 Muscle Structure and Function: Overload and Disuse G 4
Muscle structure and function as related to normal physiology, overload, disuse, and exercise.
2 2/hr cl. Prereq: 802.01; Physiol 602 or permission of instructor. Limited to 10 students.

803 Improvement of Instruction in Basic Business Subjects G 3
A study of objectives, methods, materials, and methods of evaluation for courses such as general business, consumer education, and business law.
2/1-2/hr cl. Not open to students with credit for Ed-STDS 803.

804 Organization and Teaching of Typing and Office Practice G 3
The purposes, content, organization, materials, and methods of evaluation for typing and office practice courses; office practice as a part of an intensive vocational curriculum.
2/1-2/hr cl. Prereq: Teaching experience or permission of instructor.
805 Teaching the Gifted: Instructional and Curricular Adaptations  G 4
Information and skills for modifying curriculum for gifted presented in a workshop format. 2 1/2-hr cl, 2 hrs practica/sek. Prereq: 705.

806 Sport Management and Administration  G 3
The various aspects of athletic, intramural, and recreation administration. 2 1 1/2-hr cl. Prereq: At least 2 qtrs in sports administration program or physical education PhD candidate with minor area of athletic administration.

807 Legal Issues Affecting Sport  G 3
A study of legal issues affecting the delivery of sport services; focus on liability in sport activities. 2 1 1/2-hour cl.

808 Effective Management of Sport Delivery Systems  G 3
Application of contemporary management techniques used in the design and operation of sport delivery systems. 2 1 1/2-hr cl. Prereq: 3 hrs of management sci, 806, or permission of instructor.

809 Sport Marketing  G 3
Examination and utilization of basic marketing principles in the areas of sport (collegiate and professional) recreation. 2 1 1/2-hr cl. Prereq: Bus-Mktg 650.

811 Occupational Analysis  G 3
Development and utilization of procedures used in analyzing a technical occupation for teaching content. 3 cl. arr. field experience. Not open to students with credit for 657 or Ed-EPTS 657.

812 Educational Assessment for Children with Disabilities  G 3
Strategies for educational assessment of the behavior of infants and preschoolers with disabilities, with emphasis on instructional program planning. 1 2 1/2-hr cl. Prereq: 251, 650 or equiv; and 712.

813 Instructional Programming in Early Childhood Special Education  G 3
Methods for development of language/communication, sensorimotor, cognitive, social, and motor skills. 1 2 1/2-cl. Prereq: 251, 650 or equiv; and 712.

814 Inclusion for Young Children with Disabilities  G 3
This seminar will provide an in-depth study of diverse factors which influence the inclusion of young children with disabilities in educational and community settings. 1 2 1/2-hr cl. Prereq: 712 or Ed-S&R 712.

816 Health Behavior Change in Adulthood and Later Years  G 3
Review of research on changing health behavior; includes smoking cessation, weight control, hypertension, stress, health promotion programs, and changing health behavior after 65. 1 2 1/2-hr cl. Prereq: BS or BA degree in hith edu or related field; advanced grad standing. Not open to students with credit for HPER 816.

817 Developing Instruction for Business and Industry  G 3
The systematic development of instructional programs for business and industry; role of the instructional developer in business and industry will also be examined. 2 1/2-hr cl. Prereq: permission of instructor. Not open to students with credit for 660 or Ed-Stds 660.

818 Designing Individualized Training Systems  G 3
The design of individualized training and performance systems for business and industry. 2 1 1/2-hr cl. Not open to students with credit for Ed Stds 670.

819 Models of Health and Well-Being  G 3
Examines beliefs about health and explores models that depict ways in which the body, mind, and spirit work together to promote health and well-being. 1 cl.

823 Evaluation in Health Education  G 3
Identification and application of various techniques for evaluating, learning, processes, and programs in health education. 3 hrs arr. Prereq: MSc or MA degree in hith edu or allied field; advanced grad standing.

825 Principles and Programming for Persons Who are Severely or Multiply Disabled  G 3
Includes transdisciplinary focus, community-based curriculum, integration with nondisabled peers, and nonverbal communication. 1 3-hr cl. Prereq: A course in educational programming for children with intellectual disabilities, and a course in language development and permission of instructor.

826 New and Emerging Assistive Technologies for Individuals with Disabilities  G 3
Interdisciplinary course covering applications of technology to meet the functional needs of individuals in mobility, manipulation, communication, and cognition and learning. Lec/lab. Not open to students with credit for All Med 802. Cross-listed with All Med 802.

828 Administrative Practices in Vocational Education  G 3
A study of the concepts of vocational education program administration, including management skills, policy development, staff management, finance, and program evaluation. 1 2 1/2-hr cl. Not open to students with credit for Agr Educ 811 or 821, Ed-Stds 821. Cross-listed in Agr Educ 821.

829 Curriculum and Advanced Instructional Strategies for Students with Learning Disabilities  G 3
Advanced study of individualized methods of instruction for elementary and secondary students with specific learning disabilities; emphasis on assessment and design of appropriate instructional programs. 1 3-hr cl. Prereq: Permission of instructor.

830 Strategies for Effective Individual Instruction  G 3
Advanced study of precision teaching as a methodology for the systematic evaluation of learning and use in all instructional tactics and curricula. 1 3-hr cl. Prereq: Permission of instructor.

831 Strategies for Effective Group Instruction  G 3
Study of theory, research, and literature on strategies and tactics of group instruction. 1 3-hr cl. Prereq: 742.

832 Planning and Implementing Instruction for Generalized Outcomes  G 3
Guiding principles, general strategies, and specific tactics for designing instruction that promotes the generality of newly learned skills over time, settings, and response classes. 1 3-hr cl. Prereq: 831.

833 Advanced Studies in the Education and Management of Students with Severe Behavior Disorders  G 3
Study of most recent research and literature on the education, management, and programming of students with severe behavior disorders. 1 3-hr cl. Prereq: Permission of instructor.

834 Supervision of Vocational Instruction  G 3
A study of the concepts of vocational education supervision, including leadership styles, improving instruction, and program and personnel evaluation. 1 2 1/2-hr cl. Prereq: 609 or equiv. Not open to students with credit for Agr Educ 811 or 830, Ed-Stds 830. Cross-listed in Agr Educ 830.

835 Problems in Interscholastic and Intercollegiate (duplicate) Athletics  G 3
The relation of athletics to education: problems of athletic organization; eligibility; finance, current trends, and developments in management and purpose; public relations. 1 2 1/2-hr cl.

836 Structures and Processes of Sport Organizations/Associations  G 3
Examines the organizational structures and processes of amateur, interscholastic, and professional sport organizations/associations. 2 1/2-hr cl.

838 Vocational Education Program Planning  G 3
A study of the planning, development, management, and evaluation of instructional systems in vocational education programs. 1 2 1/2-hr cl. Not open to students with credit for Agr Educ 823 or 833, or Ed-Stds 833. Cross-listed in Agr Educ 833.

840 Instructional Design for Teacher Educators in Physical Education  G 3
Classification and analysis of learner outcomes in activity settings; emphasis on empirical methods for analyzing outcomes and alternatives for achieving outcomes in teacher education programs in physical education. 1 3-hr cl.
841 Physical Education in School and College
An overview of the contemporary scene in physical education and an analysis of trends and events affecting it.
1 2 1/2-hr cl.

844 Vocational Evaluation and Development
A study of vocational evaluation, development, and work adjustment materials and practices utilized in educational and rehabilitation settings.
1 2 1/2-hr cl. Prereq: 790 or permission of instructor. Not open to students with credit for Ed-Studs 844.

845 Work Adjustment and Development
A study of the principles and procedures of work adjustment and development techniques, methods, and resources utilized in educational and rehabilitation settings.
1 2 1/2-hr cl. Prereq: 730 or permission of instructor. Not open to students with credit for Ed-Studs 845.

847 Transition from School to Employment and Community Life for Students with Disabilities
Programming for secondary students to facilitate successful transitions to adult life, including employment, post-secondary education, residential, and community concerns.
1 3-hr cl. Prereq: 650 or equiv and permission of instructor.

848 Management and Administration of Programs for Exceptional Children
A review of technology, trends, and issues basic to the management and operation of a special education program with the intention of preparing leadership personnel.
1 3 1/2-hr cl. Prereq: 650 and grad standing in special education; or written permission of instructor.

849 Teaching Students with Severe Behavior Disorders
Introduction to problems, issues, and practices in educating children with severe behavior disorders including identification, assessment, educational programming, and legal considerations.
1 2 1/2-hr cl. Prereq: 650 or permission of instructor.

851 Motor Learning
Critical consideration of research and theory in the acquisition of skill; special attention is given to major trends in the field.
2 1 1/2-hr cl. Prereq: Psych 600, or permission of instructor.

855 Contemporary Issues in Recreational Sports Administration
A study of current issues, management techniques, and programming concepts associated with the administration of campus recreation programs.
2 1 1/2-hr cl. Prereq: 650 or equiv.

861 Focus on Behavior Analysis in Education
Theory and practice of behavior analysis as it applies to educational issues.
Prereq: MA or PhD; permission of instructor. 1 2 1/2-hr cl.

862 Rehabilitation Case Management
An in-depth analysis of the vocational rehabilitation topics of case management, agency functioning, and the adaptation of counseling models and techniques for use with persons with disabilities.
1 2 1/2-hr cl. Prereq: 774 and 790.

864 Reactions and Adjustment to Disability
A study of individual reactions to various disabling conditions, the adjustment process, cultural norms and expectations, and responses to the rehabilitation process.
1 2 1/2-hr cl.

865 Naturalistic Inquiry in Physical Education
Consideration of design and methods of inquiry for naturalistic field studies in physical education, sport, play, health, and dance; review of research results.
1 2 1/2-hr cl, 1 hr arr. Prereq: A grad course in research methods.

867 Biochemical Methods for the Assessment of Human Performance
Development of laboratory procedures used to evaluate physiological responses and adaptations of blood and muscle to exercise.
2 cl, 3 hrs lab.

868 Research on Teaching in Physical Education
Focuses on major issues, methodologies, and significant findings of research on teaching in physical education for the past two decades.
1 3-hr cl.

869 Research on Teacher Education in Physical Education
Analysis of the literature on teacher education research and physical education literature in particular.
1 3-hr cl. Prereq: 868 or permission of instructor.

870 Research on Effective Teaching and Schooling
Review of research on effective teaching and schooling with emphasis on using knowledge to reflect on one's own teaching.
2 1 1/2-hr cl.

871 Behavioral Research Methods for Physical Education and Recreation
Methods of individual research as applied to behavioral research problems in physical education and recreation; focus on developing observational competencies and research design skills.
1 2 1/2-hr cl. Prereq: 10 hrs of applied behavior analysis, behavior modification or equivs with written permission of instructor.

872 Advanced Studies in Adapted Physical Education
Examination and assessment of developmental aspects as they relate to physical and motor performance behavior of children with developmental disabilities, mental retardation, and learning disabilities.
2 1 1/2-hr cl.

873 Behavioral Research in Education: Strategies and Tactics
This course presents advanced graduate students with knowledge of strategies and tactics for scientific and technological experimentation with human behavior.
1 3-hr cl. Prereq: 871 or HPER 871.

874 Behavioral Research in Education: Critical Analysis and Thematic Extensions
Completes the 3-course series on behavioral research in education. Recent methodological advances, development of thematic lines of research, and research ethics are key topics.
Prereq: 871 and 873.

875 Consultation in the Human Services Profession
The consultation process, models, roles, skills, and outcomes for human services personnel will be addressed; emphasis is placed on extending theoretical and practical knowledge.
1 3-hr cl, and field experience. Prereq: 773, 774, 775, grad standing, and/or permission of instructor.

876 Organization and Administration of Guidance Services
The selection, organization, and presentation of guidance materials, including analysis of types of organization, methods of initiating a guidance program, and types of in-service programs.
3 cl. Prereq: 773 or equiv.

880 Supervision for Teacher Education in Physical Education
Examines clinical models for supervision in physical education with emphasis on data collection techniques to provide feedback to teaching interns.
1 2 1/2-hr cl. Prereq: 870.

881 Planning Facilities for Athletics, Physical Education, and Recreation
Principles and techniques in determining facility needs, evaluating facilities, planning for new construction, and remodeling the areas and facilities for athletics, physical education, and recreation.
2 1 1/2-hr cl.

881.02 Indoor Facilities

884 Planned Field Experience
Planned counseling, supervisory, assessment, or teaching experience in a public school or other human service setting under supervision.
Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs, including cr hrs in ED S&R 884.60.

884.02 Foreign
This course is graded SU.

884.10 Special Education

884.20 Sport and Exercise Sciences

884.25 Rehabilitation Services

884.30 Wellness and Human Services

884.34 Counselor Education

884.40 Workforce Education and Lifelong Learning

884.63 School Psychology
885 Supervised Teaching in Special Education G 3-15
Student teaching for qualified students in the area of special education.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.
885.14 Severe Behavior Disabilities
885.48 Multiple Disabilities
885.54 Developmental Disabilities
885.x2 Specific Learning Disabilities
885.66 Gifted
886 Colloquium in Exercise Science G 1
Discussion of current research in exercise science.
1 cr. Prereq: Grad standing in HPER or permission of instructor. Repeatable to a maximum of 15 cr hrs. Required every qr for registered grad students in exercise science. This course is graded S/U.
888 Professional Writing/Publishing in Special Education G 3
Focus on procedures for conceptualizing, preparing, and submitting manuscripts to educational journals and textbook publishers.
1 3-9 hr cl. Prereq: Full-time PhD students; permission of instructor.
889 Practicum G 2-15
Opportunity to put professional theory and research into practice under supervision in University, school and agency settings.
Arr conferences and field experience. Prereq: Permission of instructor and departmental advisor based upon evidence of appropriate knowledge and skill in the selected course. Repeatable to a maximum of 12 cr hrs with not more than 4 workshops, including hrs earned in HPER 885. This course is graded S/U.
893 Advanced Individual Studies G 1-4
Arr. Plan A: not more than 15 cr hrs of any 893 and/or 899 will apply toward the master’s degree; Plan B: not more than 20 cr hrs will apply. Not more courses are graded S/U.
893.10 Special Education
893.20 Sport and Exercise Sciences
893.25 Rehabilitation Services
893.30 Wellness and Human Services
893.34 Counselor Education
893.40 Workforce Education and Lifelong Learning
893.63 School Psychology
894 Advanced Group Studies G 1-5
Advanced group studies on special problems in education.
Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.
894.10 Special Education
894.20 Sport and Exercise Sciences
894.25 Rehabilitation Services
894.30 Wellness and Human Services
894.34 Counselor Education
894.40 Workforce Education and Lifelong Learning
894.63 School Psychology
925 Seminar G 2-5
Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Research problems in:
925.10 Special Education
925.20 Sport and Exercise Sciences
925.25 Rehabilitation Services
925.30 Wellness and Human Services
925.34 Counselor Education
925.40 Workforce Education and Lifelong Learning
925.63 School Psychology
926 Doctoral-level Professional Seminars in Counselor Education G 3
Doctoral-level professional seminars covering a range of topics in professional counseling with emphasis on new developments in the theory, practice, and research of counseling.
926.01 Advanced Interventions I: Diagnosis and Intervention in Counseling
An in-depth exploration of analytical, cognitive, behavioral, and humanistic approaches to the diagnosis and treatment of five major mental and emotional disorders: organic, psychotic, affective, dissociative, and somatoforic.
1 2½-hr cl.
926.02 Advanced Interventions II: Brief Approaches to Counseling
An exploration of brief psychodynamic approaches to the diagnosis and treatment of five major mental and emotional disorders: personality, impulse control, anxiety, substance induced and substance use, and psychosexual.
Prereq: 926.01; Psych 860, 866.01, or equiv., and Psych 867.01.
926.03 Advanced Interventions III: Contemporary Systems of Counseling
An extensive exploration of the theories and applications of classical and contemporary approaches to counseling; emphasis is placed on the use of hypnosis and sensory imagery approaches to behavioral change.
Prereq: 926.02; Psych 860, 866.01 or equiv, or 867.01.
926.04 Critical Research Issues in Counselor Education, Supervision, and Practice
An exploration of critical issues in the principles of research as they apply to school, mental health, and rehabilitation counseling.
Prereq: ED-T&P and/or ED-T&P 786 or their equivs.
926.05 Helping Strategies in Career Counseling
An examination of the skills necessary for individual and group career counseling.
1 2½-hr cl. Prereq: Psych 864.01, PhD standing or permission of instructor.
926.06 Legal, Professional, and Ethical Issues in Counseling
An examination of current legal, professional, and ethical issues in counseling.
Prereq: PhD standing or permission of instructor.
926.07 Theories of Counselor Supervision
Knowledge and skills required for counselor supervision with emphasis on generic models, the supervisory relationship, and major theories.
Prereq: PhD standing or permission of supervisor.
926.08 Leadership Roles in Professional Counseling
An exploration of leadership strategies as applied to human service delivery systems in which counselors function.
Prereq: PhD standing or permission of instructor.
926.09 Advanced Theory and Intervention of Group Counseling G 3
Major group counseling theories, the group counseling relationship, and therapeutic factors; professional and ethical issues as well as current research will be covered.
1 2½-hr cl. Prereq: 774, 775, 800.01, 800.02, 974, 975, or equiv, and permission of instructor.
927 Family Counseling G 3
Introduction to basic approaches, concepts, and techniques of family counseling; the relationship between individual/group, and family counseling will be considered.
1 2½-hr cl. Prereq: Permission of instructor.
928 Substance Use and Abuse Counseling G 3
Techniques of substance use and abuse counseling emphasizing strengthening of individual and group counseling skills; drugs and their effects on individuals and families will also be covered.
1 2½-hr cl. Prereq: Permission of instructor.
931 Theory and Practice of Discussion in Adult Education G 3
Perspectives of adult learning via discussion; analysis of research on group discussion; principles of discussion oriented adult learning; application of group discussion to problem solving.
1 2½-hr cl.
932 Adult Characteristics and Learning Theory G 3
Examination of significant learning theories and their applicability to adult learning experiences.
1 2½-hr cl. Prereq: 672 or permission of instructor.
933 Internship in Adult Education G 9
Prereq: 672 and 12 cr hrs of grad work in adult education. Repeatable to a maximum of 18 cr hrs. Limited to PhD majors in adult education and selected master's candidates with major in adult education.
934 Organization and Administration of Adult Education Programs G 3
The administrative functions within adult education agencies: decision making, staff development, financing, evaluating, and improving adult education programs.
1 2½-hr cl. Prereq: 672 and written permission of instructor.
935 Program Planning in Adult Education G 3
Prepares educators to implement components in planning educational programs for adults: assessing needs, setting objectives, selecting and training staff, choosing instructional strategies, promotion, and evaluation.
1 2½-hr cl. Prereq: 672 or Ed-Stds 672 or equiv.
Education: Educational Policy and Leadership

989 Internship in Sport Management G 9
Full-time professional development experience at an approved sport work/setting. Opportunity to apply theory and skills learned in class under direction of on-site supervisor.
Internship—350 to 400 hrs. Reading/research/assignments—20 hrs. Prereq: 900 and permission of instructor. This course is graded S/U.

990 Supervised Practice in Developmental Assessment G 3
Assessment of limited numbers of children within a school setting and under close supervision, emphasis on global techniques, specific techniques, educational planning, and counseling with children, teachers, and parents.
300 clock hrs over 4-qrtr sequence. No clock hrs for 986-990. Prereq: Permission of instructor; must be taken concurrently with one of the following: 981, 982, 993, or 984. Repeatable to a maximum of 21 cr hrs.

991 School Psychologist in American Schools G 3
Overview of trends and issues confronting the professional school psychologist: establishing and maintaining a program of school psychological services.
1-3 hr cl. Prereq: Permission of instructor.

992 Internship in Child Study G 3, 6, 9, or 12
Professional experiences planned by the student, staff member, and local school supervisor.
1,200 clock hrs for 3-qrtr sequence. Prereq: Permission of instructor. Limited to select PhD and post-master's students specializing in school psychology. Repeatable to a maximum of 36 cr hrs.

995 Doctoral-level Internship in Counseling G 3-15
Supervised internship in professional counseling for doctoral-level students in educational, mental health, or related settings.
Arr. Prereq: PhD standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

999 Research G Arr 1-18
Research for thesis or dissertation purposes only. These courses are graded S/U.

999.10 Special Education
999.20 Sport and Exercise Science
999.25 Rehabilitation Services
999.30 Wellness and Human Services
999.34 Counselor Education
999.40 Workforce Education and Lifelong Learning
999.63 School Psychology

Educational Policy and Leadership
(See Education: Physical Activity & Education Services; Education: Educational Policy and Leadership; Education: Teaching and Learning)

Education: Educational Policy and Leadership
Office of Student Services, 688-4007
122 Ramseyer Hall, 29 West Woodruff

Although all prerequisites and exclusions may not be listed, they are still in effect and will be enforced. (i.e., students who have taken a course with a different prefix, prior to College restructing, cannot receive credit for the same course, even though the course may have a new prefix and be located in a different academic unit. Prerequisites will have new prefixes and/or new numbers, but will be enforced. If you are unsure, please contact the Office of Student Services listed above.)

Notice: All courses may not appear in this listing. (For a complete listing of courses, please contact the Office of Student Services listed above.)

Cultural Studies in Education, 688-5590
260, 370, 600, 610, 615, 622, 624, 625.01, 626.02, 628.03, 650.01, 650.02, 650.03, 650.04, 655, 677, 678, 692.46, 692.49, 693.40, 693.46, 693.49, 694.40, 694.46, 694.50, 765, 704, 706.01, 706.02, 706.03, 706.04, 706.05, 727.40, 727.46, 727.49, 730, 731, 778, 791, 798, 800, 812, 817, 819, 822, 823, 824, 825, 826, 829, 830, 831, 832, 833, 834, 839, 849, 851, 852, 853, 855, 860, 863, 866, 869, 899, 917, 871, 884, 894.40, 894.46, 894.50, 903.46, 903.49, 904.40, 904.46, 904.49, 905, 906, 907, 908, 925.40, 925.46, 925.48, 927, 985, 999.40, 999.46, 999.49.
311 Impact of Technology in Learning and Education U 5
The theories, function, impact, and use of technology in formal and informal learning and education environments.
2 2-hr cl, 1 rec, lab arr.

370 Computers in the Classroom: An Introduction U 3
An introduction to educational computing.
2 cl, 4 hrs lab. Not open to students with credit for Ed-P&L 671.

411 Body/Mind Goes to School U 5
Current and emerging theoretical and cultural conception of body and mind and how they affect educational theories and practices.
2 1 1/2-hr cl, 2 1 1/2-hr labs.

413 Legal Issues in Education U 5
An exploration of legislative, executive and judicial action pertaining to activities in education.
2 2-hr cl, 1 rec.

414 Gender Education U 5
Examination of the education of females in schools through the lenses of history, psychology, sociology, policy analysis, and curriculum.
1 2-hr cl, 2 1 1/2-hr rec.

500 Basic Media Skills U G 1
Self-instructional modules and activities emphasizing the selection, utilization, and preparation of teaching material.
3 hrs lab. Prereq: Admission to a teacher education program certification area and permission of instructor. Course of production materials must be borne by the student. Not open to students with credit for Ed-T&P 500. This course is graded S/U.

510 Women's Sport History U G 4
Examines women's sport experiences from primitive cultures to contemporary societies; investigates influence of class, economics, power relationships, education, and views of the body.
4 cl.

615 Developing Discipline for Effective Learning U G 3-5
Causes of and procedures for dealing with school discipline problems; focus upon the teacher, student, classroom, and school situations.
1 2 1/2-hr cl, arranged practicum. Prereq: teaching experience or enrolled in student teaching.

622 History of Physical Education and Sports from Ancient Times to 19th-Century Europe U G 3
A history of physical education and sports which includes primitive societies, Greek and Roman civilizations, the medieval period, and European countries in the 18th and 19th centuries.
3 1-hr cl.

626 Sport and Popular Culture Series U G 3
A variety of themes present in selected popular cultural forms dealing with a variety of sports such as football, basketball, baseball, and track and field. Cross-listed with Edu PAES.
1 1-hr cl, 1 2-hr cl.

626.01 Sport and Popular Culture Overview

626.02 Sport and Popular Culture - Race and Gender
Prereq: 626.01 or permission of instructor.

626.03 Sport and Popular Culture - Baseball
Focus on baseball as it has appeared in film and literature of and about the early 1900's to the present day.
Prereq: 626.01 or permission of instructor.

650 Humanistic Foundations of Education U G 3
Su, Au, Wi, Sp, Sps, 3 cl. Prereq: 3rd yr standing in a recognized university teacher education program, or good standing, or permission of dept office.

650.01 Philosophy of Education
Designed to provide students with an application of philosophy of education to issues and problems of teaching and living in a culturally diverse society.

650.02 History of Modern Education
Education and schools as factors in the development of the modern world; theories, practice, relations with other social institutions and forces, especially in Europe and America.

650.03 Applied Ethics for Teachers
An examination of selected moral/ethical issues which face practicing educators; emphasis on developing ethical decision-making skills.

650.04 Social Criticism in American Education
Analysis and interpretation of critical stances taken by selected major writers on educational topics of current interest.

658 Sport in Western Culture U G 3
Examines sport in North America, South America, and European countries with emphasis on influences of political ideology, economics, gender, race, and nationalism.
3 1-hr cl.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>671</td>
<td>Fundamentals of Computer Applications in Education and Training U G 4</td>
<td>An introduction to the common uses of computers in educational and training settings; emphasis on instruction and management. 1 2-hr cl, 4 hr lab, 2 hrs arr. Not open to students with credit for Ed-P&amp;L 270. Open only to professional educators.</td>
</tr>
<tr>
<td>675</td>
<td>Audiovisual Materials of Instruction U G 4</td>
<td>Designed to provide basic experience in theory, design, preparation/selection, utilization, and evaluation of materials and equipment available in modern learning environments; emphasis on a final synthesizing project. 2 cl, 2 2-hr lab.</td>
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<tr>
<td>676</td>
<td>Planning and Preparing Teacher-Made Educational Media U G 3</td>
<td>Demonstration and practice in the preparation of teaching materials using desktop publishing; emphasis on the development of fliers, worksheets, overheads, and simple animations. 1 2-hr cl, 1 2-hr lab. Prereq: 4th yr or grad standing.</td>
</tr>
<tr>
<td>677</td>
<td>Educational Telecommunications U G 3</td>
<td>The varied types of educational telecommunications in relation to designs, planning, production, utilization, and evaluation. Prereq: 4th yr standing.</td>
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<td>678</td>
<td>Introduction to Instructional Systems Development U G 3</td>
<td>Paradigms for instructional development: learner, task, and curriculum analysis; prototype development; completion of a production proposal/storyboard; subsequent enrollment in 778 expected. 1 2-hr cl, 1 2-hr lab. Prereq: 675.</td>
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<tr>
<td>680</td>
<td>Instructional Television Production U G 4</td>
<td>Functions and operations of small format video production and post-production equipment; application of theory and research to the production of video materials for instruction. 2 2-hr cl, 2 2-hr lab, arr. Prereq: 677 and 678 recommended.</td>
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<tr>
<td>683</td>
<td>Solving Classroom Problems U G 3</td>
<td>Exploration of problem areas of classroom control, student learning, parent relationships, relationships with other teachers, and time management. 1 2-hr cl. Prereq: Student teaching or permission of instructor.</td>
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<tr>
<td>692</td>
<td>Workshops U G 1-3</td>
<td>Intensive study of problem common to the participants for the purpose of developing sound principles and practices relating to it. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 cr hrs.</td>
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<td>693</td>
<td>Individual Studies U G 1-4</td>
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<td>Group Studies U G 1-5</td>
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**Education: Educational Policy and Leadership**

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<td>697</td>
<td>Study at a Foreign Institution U G 1-15</td>
<td>An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.</td>
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<tr>
<td>698</td>
<td>Study Tour U G 1-5</td>
<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.</td>
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<td>698.01</td>
<td>Domestic</td>
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<td>698.02</td>
<td>Foreign</td>
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<td>700</td>
<td>Interprofessional Practicum in Clinical Settings U G 3 or 5</td>
<td>Interprofessional teamwork in clinical settings. Prereq: Permission of instructor.</td>
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<td>700.05</td>
<td>Interprofessional Seminar in Policy Analysis U G 3</td>
<td>Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions. Prereq: Permission of instructor.</td>
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<td>700.09</td>
<td>Care of Chemically Dependent Families U G 3</td>
<td>Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.</td>
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<td>700.07</td>
<td>Interprofessional Approaches to Child Abuse and Neglect G 3</td>
<td>Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect. 1 2-hr cl. Prereq: Permission of instructor: Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.</td>
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<tr>
<td>701</td>
<td>Logic in Teaching U G 3</td>
<td>Study of the logical aspects of teaching; includes attention to definitions, arguments, explanations, questions, and value judgments. 2 1 1/2-hr cl. Prereq: 650.01 and 4th yr standing.</td>
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<tr>
<td>702</td>
<td>Modern Trends in Educational Philosophy U G 3</td>
<td>A study of contemporary work in philosophy of education and applications of that work to educational practice. 1 2 1/2-hr cl.</td>
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<td>704</td>
<td>American Sport History U G 5</td>
<td>Examines intersection of sport and society in America. Investigates influence of city, modernization, race, class, gender, consumer society, media on sporting structures, attitudes, and meaning. Sp Qtr. 2 2-hr cl, 1 hr arr.</td>
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<td>705</td>
<td>Education and Spirituality: Holistic Perspectives U G 3</td>
<td>Examination of emerging themes and theories of spirit and spirituality in curriculum thought and educational practice, including cross-cultural, feminist, ecological, and postmodern perspectives. Au Qtr. 1 3-hr cl.</td>
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<tr>
<td>706</td>
<td>Somatic Studies</td>
<td>A series of courses focusing on mind/body integration issues and the meaning of the movement experience in education and the culture at large.</td>
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727.44 Educational Administration and Supervision
727.46 Instructional Design
727.49 Curriculum, Instruction, and Professional Development
727.50 General Professional Studies
727.60 Quantitative Research, Evaluation and Measurement in Education

730 Philosophical Perspectives of Sport and Leisure U G 5
Examination of philosophical sport and leisure scholarship with emphasis on contemporary theoretical literature and issues.
2 2-1/2 hr cl and 1-hr arr. Required of grad students in the socio-cultural studies area of concentration.

744 Assessment for Classroom Teachers G 2-4
Concepts and practical experience in student assessment with optional clinical work.
2 1-1/2 hr cl for 2 cr hrs, 20 hrs of clinical experience in public schools for each additional cr hr. Prereq: Grad standing and enrollment in a teacher education program. Not open to students with credit in ED S&R 744.

745 The Inquiry Process — The Classroom Teacher as an Inquirer and Consumer of Research G 2-4
Approaches to educational research with critical review of research studies and their relationship to practice.
2 1-1/2 hr cl for 2 cr hrs, 20 hrs of clinical experience in public schools for each additional cr hr. Prereq: Grad standing and enrollment in a teacher education program. Not open to students with credit in ED S&R 745.

756 Inservice Education of Teachers G 3
An overview of the goals, problems, practices, issues, research, theory, organizations, and literature of inservice education for teachers.
1-1/2 hr cl.

765 Introduction to Educational Evaluation U G 3
Introduction to educational evaluation including history, models, theories, politics of evaluation, and types of evaluation.
2 2-1/2 hr cl. Prereq: 785 and/or permission of instructor. Not open to students with credit for Ed-TAP 765 and Ed S&R 765.

768 Directing Student Teachers U G 3
Principles and techniques for directing the laboratory experiences of student teachers and other teacher education students.
1 2-1/2 hr cl. Prereq: experience.

775 Foundations of Librarianship for Educators U G 3
Critical examination of libraries and the role of librarians in contemporary society, emphasizing their function in education.
1-1/2 hr cl.

778 Formative Evaluation of Instructional Systems U G 3
Theory and practice of developmental testing and field evaluation of instructional systems.
W/F. 1-1/2 hr cl. Prereq: 678 and course(s) in media production resulting in a prototype instructional system.

779 Development and Management of Educational Media Centers G 3
Media specialist's responsibilities for the successful operations of a media program; planning, organization, administration, and service functions; emphasis on school library media programs.
Prereq: 675 or equiv.

780 Introduction to Student Affairs U G 3
The nature of and issues involved in the work of student affairs in higher education. Hollingsworth.
Au Qtr. 1 2-1/2 hr cl.

782 Practice of College Student Development G 3
First practical course in professional sequence; prerequisite to field work; major college student development practice is examined; research on practitioners' projects are examined. Rodgers.
Au Qtr. 2 1-1/2 hr cl.

785 Introduction to Inquiry, Principles, Strategies, and Techniques U G 3
Introduction to inquiry strategies and their role in educational development; emphasis is on the conceptualization of educational problems.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 4th year or grad standing. Not open to students with credit for Ed S&R 785.

786 Introduction to Inquiry: Quantitative Methods U G 3
An introduction to quantitative techniques, with emphasis on application in educational settings.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 4th year or grad standing. Not open to students with credit for Ed-S&R 786.
808 Experimental Design in Education I  G 3
An examination of logical and quantitative principles, especially the analysis of variance, underlying basic experimental designs employed in educational research. Kennedy.
Au Qtr. 2  1/2-hr cl. Prereq: 786 or Ed-TAP 786 or equiv. Not open to students with credit for credit for Ed-TAP 808 or Ed S&R 808.

809 Experimental Design in Education II  G 3
An examination of intermediate quantitative principles and issues underlying experimental design in education, especially principles and issues associated with factorial designs employing multiple response measures. Kennedy.
Wi Qtr. 2  1/2-hr cl. Prereq: 808 or Ed-TAP 808 or equiv. Not open to students with credit for Ed-TAP 809 or Ed S&R 810.

810 Experimental Design in Education III  G 3
Sp Qtr. 2  1/2-hr cl. Prereq: 809 or Ed-TAP 809 or equiv. Not open to students with credit for Ed-TAP 810 or Ed S&R 810.

811 Sources of Progressive Thought in American Education  G 3
An examination of the ideas that provided the philosophical basis for progressive education with an emphasis on the historical context in which these ideas were developed.
1 3-hr cl.

812 American Schools and American Society  G 3
Education and schooling in the United States.
1 2 1/2-hr cl. Prereq: Grad standing.

813 Understanding Educational Organizations: Insights from Organizational Theory  G 3
An introductory survey of the applications of formal organization theory for the purpose of understanding educational organizations—a core course in administrator certification.
1 2 1/2-hr cl or 2 1 1/2-hr cl. Certification students must also enroll for 1 hr in 984B44.

814 Historical Bases of Curriculum Development  G 3
Intensive analysis of the outstanding contributions made by scholars in the field from 1800 to 1960.
Prereq: 860.

815 The Community College  G 3
History of community colleges; evaluation of organization and administration; campus planning; and federal, state, and local governmental relations with these colleges.
1 2 1/2-hr cl.

816 Contemporary Research and Issues in Teacher Thinking, Curriculum, and Educational Technology  G 4
Surveys research on teacher thinking, curriculum, and educational technology and explores issues related to it and its implications.
Wi Qtr. 2 2-hr cl.

817 Analysis of Classroom Discourse  G 3
An introduction to the analysis of the discourse structures of the classroom, this course addresses the face to face organization of classroom order, interaction and instruction.
Wi Qtr. 1 2 1/2-hr cl.

818 Contemporary Perspectives on Instruction  G 3
Overview of the research basis of classroom instruction, both historical and contemporary; the conceptual framework used, the paradigm used, questions explored, variables studied, and findings will be examined.
1 2 1/2-hr cl.

819 Professional Sport in 20th-Century America  G 3
Examination of the development of professional sport; its economic structure and relationship to mass media the nature and problems of professional athletes.
2 1/2-hr cl. Prereq: Enrollment in Sports Management Program, or permission of instructor.

820 Financing Higher Education  G 3
A study of financing higher education with emphasis on issues affecting higher education; criteria for identifying and developing sources of financial support for institutions of higher education. Sweetland.
1 2 1/2-hr cl or 2 1 1/2-hr cl. Prereq: 806 or 815.

821 Comparative Perspectives on Education in Latin America  G 3
Comparative examination of the social and cultural contours of education through Latin America.
Wi Qtr. 1 2 1/2-hr cl.
822 Cultural Studies in Education G 3
Examines how cultural studies frames questions and themes pertinent to the study of education, technology, inquiry, sport, and the body.
Au Qtr. 1 3-hr cl.

823 The Functions of the Computer in the Classroom G 3
A critical examination of the issues raised by the implementation and use of microcomputers in schools.
Au, Sp Qtrs. 3 cl.

824 Educational Policy Analysis in Contemporary Culture G 5
An exploration of traditional and emerging approaches to policy analysis in education.
Wt Qtr. 2 2-hr cl.

825 Visualizing the Curriculum G 3
Investigates questions relating to visual literacy with emphasis on the design and use of images in educational settings.
Sp Qtr. 1 2½-hr cl.

826 Cultural Diversity, Equity, and School Reform G 3
Examination of intersections of cultural diversity, equity and school reform.
Su Qtr. 1 2½-hr cl.

828 Ethical Problems in Education G 3
An examination of theories of value in education which focuses on the philosophical problems of formulating and defending moral judgments.
1 2½-hr cl.

829 Technology, Society, and Schools G 3
Examination of theories and history of interaction of society and technology with implications for instructional technology and schooling. Resources for constructing personal definitions of technology.
Su Qtr. 1 3-hr cl.

830 Critical Issues in Global Education G 3
Examines pedagogy for global perspectives in teaching about cultures, global inequalities, advocacy, positonality, privilege, marginalization and resistance to oppression.
Su, Au, Wi, Sp Qtrs. 1 3-hr cl.

831 Integrating Multicultural and Global Education G 3
Alternative conceptual and programmatic approaches to the integration of multicultural and global education.
Su, Au, Wi, Sp Qtrs. 1 3-hr cl.

833 The Politics of Curriculum Knowledge: Critical Issues in Curriculum G 3
Examination of how politics, ideology, economics and cultural perspectives impact on curricular knowledge.
Wi Qtr. 1 2½-hr cl.

834 An Interpretative History of African American Education 1950 to 1990 G 3
Examination of African American education from the perspective of African American scholars from the 1950s to the 1990s.
Au Qtr. 1 2½-hr cl.

835 Personnel Administration in Higher Education G 3
A study of the staff personnel function in institutions of higher education through a consideration of personnel policies and operating principles.

838 Evaluation Methods: Principles of Needs Assessment I G 4
Introduction to the concept of need, issues in needs assessment, and types of needs assessment strategies with a special emphasis on basic techniques and procedures.
1 2½-hr cl. Prereq: 765 or Ed-T&P 765 or permission of instructor. Not open to students with credit for Ed-T&P 853 or Ed S&R 851.

837 Evaluation Methods: Principles for the Evaluation of Professional Personnel in Education G 3
Designed to help people to manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations. Hasebe.
1 2½-hr cl. Ed-P&L 765 recommended. Not open to students with credit in Ed S&R 852.

838 Evaluation Methods: Principles of Needs Assessment II G 3
A brief overview of needs assessment followed by an inspection of in-depth needs assessment procedures used in education, agencies, and business/industry settings.
1 2½-hr cl. Prereq: 765 or 851 or Ed-T&P 765 or Ed-T&P 863 or permission of instructor. Not open to students with credit in Ed S&R 853.

839 Women in Higher Education G 3
Examines conditions and positions of women in higher education and strategies for enhancing the quality of their experiences in the academy.
Au Qtr. 1 2½-hr cl.

840 Legal Aspects of Higher Education Administration G 3
Statutory and case law are analyzed for administrative implications; changing legal developments in college and university governance patterns.

841 Curriculum in Higher Education G 3
A study of representative and experimental college programs in the United States.
1 2½-hr cl.

842 Administration of Academic Affairs in Higher Education G 3
Principles and problems of administering academic affairs in light of development, financial considerations, and evaluation. Sagaria.
1 2½-hr cl or 2 1½-hr cl. Prereq: 806.

843 Administrative Responsibilities and Perspectives: Equity, Learning, and the Individual G 3
Administrators' responsibility to see equity and the rights of individual are recognized and enhanced in the school setting.
1 2½-hr cl. Prereq: 846 or permission of instructor. Mandated requirement for the Certification of Administrators in the State of Ohio.

844 The Educational Leader as Learner: Knowledge and Administration G 3
Designed to increase the educational administrator's ability to accept and use the notion that human beings believe differently (alternative ideologies) and learn differently (alternate epistemologies).
1 2½-hr cl.

845 Politics and Political Leadership in American Education G 3
A critical examination of national, state, and local politics and political leadership in American education.
2½-hr cl. Certification students must also enroll for 1 hr of 884AA.

846 Introduction to Educational Administration G 3
Introduction to the organizational setting of the school, the nature of administration, and personal decision making about careers in educational administration—a core course in administrator certification.

847 Human Relations in Educational Administration G 3
Interpersonal behavior in educational organizations with emphasis on such topics as values, groups, power, communicating, conflict management, motivation, and human diversity.
Prereq. 806 or 846.

849 Feminist Perspectives of Women in Education G 3
Examines current positions and conditions of female faculty and students in schools, colleges, and universities. Feminist scholarship provides theoretical lenses through which to consider the intersections of gender, sexuality, race, ethnicity, and class, and their impact on daily lives of women.
Au Qtr. 1 3-hr cl. Prereq: Written permission.

850 Internship in Educational Research and Development G 3-12
Internship experiences in research, development, or evaluation settings.
Art. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs, including or hrs in Pr-T&P 850 and Ed S&R 850.

851 College Teaching G 3
Designed as initial preparation for instruction at the college level; focuses on the generic skills, strategies, and issues common to university teaching.
1 2½-hr cl. Open to grad students committed to teaching in any area at the college level. This course is graded S/U.

852 A History of the Education of Women G 3
Investigation and critical analysis of selected educational theories by significant past and present theorists who have addressed the education of women.
1 2½-hr cl. Prereq: Grad standing.

853 Women, Technology, and Education G 3
Analysis of issues in the relationships between women's lives and technological development; exploration of current needed educational response to these issues.
Wi Qtr. 1 2½-hr cl.
854 Evaluation Methods: Principles and Techniques for the Evaluation of Teaching and Teachers  G 3
Designed to help people manage the design, implementation, and evaluation of performance appraisal and review systems in educational organizations. Haeffle.
1 2 1/2-hr cl. Prereq: 765 or Ed-T&P 765 recommended. Not open to students with credit in Ed S&R 854.

855 The Role of Sports in Society  G 5
Significance of sport to individuals and groups in society. 2 2-hr cl, 1 hr arr. Prereq: Sooi 460, or equiv.

856 Observing Classroom Instruction  G 3
Exploration of different approaches used to observe the nature of instruction in classrooms and other educational settings; examines theoretical bases and assumptions.
1 2 1/2-hr cl.

857 Individualizing Instruction  G 3
A study of theory, practice, and materials related to individualizing instruction.
1 2 1/2-hr cl.

858 Case Studies in Higher Education Administration  G 3
Designed to enhance decision-making skills and managerial communication and to increase understanding of current problems and practices in higher education governance and administration.
Wi Qtr. 1 1/2-hr, 2 1-hr labs. Prereq: 806.

859 Junior High School Curriculum  G 3
A study of various types of junior high school programs, with special emphasis upon teaching-learning procedures as they apply to the early adolescent years.
1 2 1/2-hr cl. Prereq: Ed-T&P 451 or Ed-P&L.

860 Fundamentals of Curriculum  G 3
Designed to serve as an overview of the field of curriculum and instruction; kindergarten through 12th grade.
Su, Au, Wi, Sp Qtrs. 1 1/2-hr cl.

861 Fundamentals of Supervision  G 3
Supervision of instruction emphasizing general principles and practices in elementary and secondary schools.
1 2 1/2-hr cl.

862 Role of the School in the Social Order  G 3
An orientation for teachers and administrators which deals with the basic purposes of secondary education in relation to major issues and current trends.
1 2 1/2-hr cl.

863 An Interpretive History of African-American Education: 1700-1950  G 3
Designed to give students an understanding of the education of African-Americans from the perspective of African-American scholars.
1 2 1/2-hr cl.

864 Fundamentals of Instruction  G 3
Survey of instructional theory and related behavioral science disciplines; emphasis is on application of principles of instructional theory to classroom teaching.
1 2 1/2-hr cl. Prereq: Secondary (587) student teaching or equiv.

865 Curriculum Theory  G 3
Advanced study of curriculum; kindergarten through the 12th grade.
Au, Sp Qtrs. 2 1/2-hr cl. Prereq: 860 or equiv.

866 Supervision Theory  G 3
Advanced study of supervision of instruction; kindergarten through the 12th grade.
2 1/2-hr cl. Prereq: 861 or equiv.

867 Educational Experimentation  G 2-5
Analysis of contribution of selected experiments to elementary, secondary, and higher education; design of experimental method for attacking educational problems.
1 2-hr lab, conf arr. Prereq: 785 or Ed-T&P 785, or Ed S&R 785 and 15 cr hrs of grad work in educ. Repeatable to a maximum of 5 cr hrs, including cr hrs in Ed-T&P 867 and Ed S&R 867.

868 Laboratory in Curriculum Development  G 3
Advanced study of techniques of curriculum development and organization; specific problems in curriculum development which are of concern to the students enrolled.
Wi Qtr. 1 2 1/2-hr cl. Prereq: 862 or equiv.

869 Instructional Theory  G 3
Advanced study dealing with theoretical conceptions, basic principles, and generalized techniques involved in developing, executing, and evaluating instructional activities.
1 2 1/2-hr cl. Prereq: Permission of instructor.

870 Internationalizing Colleges and Universities  G 3
Examines goals and program strategies for internationalizing colleges and universities, including implications for faculty, students, and the curriculum.
Au Qtr. 1 2 1/2-hr cl. Prereq: 860 or permission of instructor. Explores both broad rationale for internationalizing institutions, as well as specific program elements such as study abroad, international student enrollment, language or international study.

871 Theories of Gender in Education  G 5
Introduces major intellectual currents informing theories of gender in education.
Su, Au, Wi, Sp Qtrs. 1 4-hr cl.

872 Practicum in Curriculum, Instruction, and Supervision  G 3
A study of the literature and methods of curriculum, instruction, and supervision in a field setting, with emphasis on curriculum.
1 cl, lab arr. Prereq: 860 or 861; and master's degree.

873 Problems of Secondary School Supervision and Curriculum Development  G 3
Supervision and curriculum development emphasizing problems involved in initiating and conducting change in the secondary school curriculum.
1 2 1/2-hr cl. Prereq: 860.

874 Item Response Theory (Rasch Model) Techniques for Competency Testing  G 3
Item Response Theory (IRT) specifically the Rasch Model, is examined in depth followed by hands-on applications of IRT procedures.
Sp Qtr. 2 1/2-hr cl. Prereq: 786 or Ed-S&R 796 or equiv. Requires basic statistics and measurement.

875 Theory and Practice of Cataloging and Classifying Materials for School Media Centers  G 3
Principles, problems, and methods of descriptive cataloging for print and audiovisual materials.
3 cl. Prereq: 675; students without undergraduate course work in cataloging will be required to complete a 1 hr/week lab during 875.

876 Reference Services in the School Media Center  G 3
Principles, problems, and methods of reference services, including organization and administration of key tools (dictionary, directories, and encyclopedias) for both print and audiovisual materials.
3 cl. Prereq: 875 or equiv.

877 Appraisal, Selection, and Acquisition of Instructional Materials for School Media Centers  G 3
Criteria and strategy for the appraisal, selection, and acquisition of instructional materials related to curricular and personal needs of school media center users.
3 cl. Prereq: 876.

878 Alternative Assessment for Student Learning  G 3
Study of alternative assessment of student learning including performance, authentic, portfolio, and small group learning. Emphasis focuses on principles, procedures and issues in assessment of student learning.
Wi Qtr. 1 2 1/2-hr cl. Prereq: Ed-S&R 744 or Ed-S&R 796 or equiv.

879 Developing Computer-Based Concepts Lessons  G 5
Application of research knowledge to the development of computer-based lessons for teaching concepts.
Wi Qtr. 2 cl, 2 hrs lab, 4 hrs arr. Prereq: 878, or permission of instructor.

880 Educational Psychology: Cognitively-based Learning and Instruction  G 1
Examination of the role and research about cognitive perspectives on classroom learning and instruction, particularly research on the teaching and learning of school subjects.
Au Qtr. 2 2-hr cl.
884 Planned Field Experience G 1-15
Planned professional teaching experience under supervision in a public school or other educational agency.
Prereq: Written permission of area adviser. Repeatable to a maximum of 15 cr hrs. These courses are graded S/U.
884.03 Foreign

884.10 Educational Policy and Leadership
884.30 Educational Administration
884.32 Higher Education
884.35 Teacher Education
884.40 History of Education and Comparative Education
884.44 Educational Administration and Supervision
884.46 Instructional Design
884.49 Curriculum and Instruction
884.50 General Professional Studies
884.60 Quantitative Research, Evaluation and Measurement in Education

887 Diversity in Higher Education G 3
A survey of collegiate experimental programs and practices, their philosophies, organization, administration, educational audiences, etc., for the culturally different.
Au Qtr. 1 2½-hr cl.

888 Group Interventions in Higher Education G 3
Au Qtr. 1 3-hr cl, mandatory weekend lab. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

889 Practicum in Instructional Design and Technology G 3-5
Group observation, limited participation, and functional analysis of design and implementation in instructional systems and environments. 2 cl, 3-9 hrs arr. Repeatable to a maximum of 10 cr hrs, including cr hrs in Ed-TAP 889.

890 Action Research to Understand and Improve Educational Practices G 3
Action research is inquiry aimed at becoming a more astute practitioner by collecting and analyzing data about an aspect of concern about one's practice. 1 2½-hr cl. Permission of instructor needed for PhD students.

893 Advanced Individual Studies G 1-4
893.10 Educational Policy and Leadership
893.30 Educational Administration
893.32 Higher Education
893.35 Teacher Education
893.40 History of Education and Comparative Education
893.44 Educational Administration and Supervision
893.46 Instructional Design
893.49 Curriculum and Instruction
893.50 General Professional Studies
893.60 Quantitative Research, Evaluation and Measurement in Education

894 Advanced Group Studies G 1-5
Advanced group studies on special problems in education.
Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.
894.10 Educational Policy and Leadership
894.30 Educational Administration
894.32 Higher Education
894.36 Teacher Education
894.40 History of Education and Comparative Education
894.44 Educational Administration and Supervision
894.46 Instructional Design
894.49 Curriculum and Instruction
894.50 General Professional Studies
894.60 Quantitative Research, Evaluation and Measurement in Education

895 Fundamentals of Instructional Materials and Media G 3
Theory in educational media applied to the process of instructional development. 1 3-hr cl. Prereq: 675 cr practical experience in using educational media in school settings.
897 Designing Multimedia for Instruction G 4
Introduction to the instructional capabilities and hands-on development of multimedia including videodisc and CDROM. Topics include relevant learning theories, programming techniques and design models. 1 2-hr cl, 2 3-hr labs. Prereq: 678. Fundamentals of computing UNREQUISITED.

899 Interdepartmental Seminar G 1-3
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

901 Motivation in Learning and Teaching G 3
Examines research and theory about motivation to learn in academic settings, including studies of goal theory, social cognitive approaches and teaching practices.
Su Qtr. 1 3-hr cl. Prereq: 880 or permission of instructor. This course is graded S/U.

902 Educational Philosophy of John Dewey G 3
A systematic study of the writings of John Dewey in their bearings upon educational theory and practice. 1 2½-hr cl. Prereq: 702.

903 Fundamentals of Journal Editing G 3
Fundamentals of journal writing, editing, management, and ethics. Practice in the use of copy-editing symbols and styles of publication.
Au Qtr. 1 2½-hr cl.

904 Women: Leadership and Empowerment G 5
Focus on understanding and enacting leadership and empowerment that is congruent with women's lives and feminist perspectives.
Sp Qtr. 1 2½-hr cl, 4 hrs social action project. Prereq: Written permission.

905 Research in Cultural Studies G 3
Discussion of current research in Cultural Studies in Education.
Wi, Sp Qtrs. 1 2½-hr cl. Prereq: Two earlier core courses in Cultural Studies. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

906 Contemporary Readings in Cultural Studies G 3
Explores central topics in Cultural Studies in Education.
Wi, Sp Qtrs. 1 2½-hr cl. Prereq: 822.

907 Themes and Theories in Cultural Studies G 3
Examines themes and theories which undergird cultural studies and relates them to the study of education, technology, sport, and the body.
Au Qtr. 1 3-hr cl.

908 Analyzing Qualitative Data in Educational Research G 5
Focus on the interpretation of qualitative data and the writing of research reports.
Sp Qtr. 1 3-hr cl, 6 hrs lab. Prereq: 800 and 966 or equivale.

910 Admissions and Retention in Higher Education G 3
Analysis and review of research and practice in college admissions and retention programs.
Su Qtr. 1 2½-hr cl. Elective in MA and PhD programs in higher education and student affairs.

912 Impact of College on Students G 3
Analysis of philosophical assumptions and statistical evidence on the impact of colleges.
Wi Qtr. 1 2½-hr cl. Part of doctoral core in higher education.

913 Leadership in Educational Administration G 3
Study of theory and practice of leadership in educational administration; course directed to doctoral students concentrating in K-12 administration.
Sp Qtr. 1 2½-hr cl. Limited to 1st yr doctoral students in educational administration. Part of the doctoral core in educational administration.

914 Strategy and University Leadership G 3
Advanced study of institutional strategy, resource management and leadership issues for colleges and universities.
Sp Qtr. 1 2½-hr cl. Prereq: 806 and 842, or permission of instructor. Course for PhD and advanced master's students interested in institutional leadership roles.

915 Professional Development in Higher Education G 3
Introduction to research and theoretical foundations of organizational, faculty, and instructional development in higher education; emphasis on major issues and careers in professional development.
Sp Qtr. 1 2½-hr cl. Prereq: 851. Focus on professional development in higher education.

916 Data Based Decision Making in Educational Administration G 3
Examines research in educational administration from a critical perspective.
Au Qtr. 1 2½-hr cl. Prereq: Admission to PhD program. Limited to PhD students in ed-admin.
924 Curriculum and Instruction in Teacher Education  G 6
Study of teacher education curriculum and how instruction is conducted; hands-on experience with newer instructional alternatives, e.g., microteaching, reflective teaching, and simulation.
Au Qtr. 2 2 1/2-hr cl.

925 Seminars G 2-5
Prereq: Written permission of instructor. Students with permission of advisors may register for more than one section of 925 or for the same section two or more times.

925.10 Educational Policy and Leadership
925.30 Educational Administration
925.32 Higher Education
925.36 Teacher Education
925.40 History of Education and Comparative Education
925.44 Educational Administration and Supervision
925.46 Instructional Design
925.49 Curriculum and Instruction
925.50 General Professional Studies
925.60 Quantitative Research, Evaluation and Measurement in Education

927 History of the Universities G 3
The university as an institution through 10 centuries; patterns of development in different countries; German, English, and American contributions to the idea of the American university.
2 1 1/2-hr cl.

928 Inquiry in Teacher Education G 3
Study of a variety of research in teacher education with emphasis on research on teacher effectiveness. Haefele.
Sp Qtr. 1 2 1/2-hr cl.

929 Developing the Curriculum in Teacher Education G 4
To acquaint prospective teachers of teachers with processes for curriculum development in teacher education: to permit them to develop a curriculum for the preparation of teachers.
Su Qtr. 1 2-hr cl. 1 2-hr lab. Open only to PhD students.

930 Internship in Higher Education G 6-12
Students are assigned as a participant-observer in a work situation closely approximating their vocational goals, under the supervision of a qualified practitioner or professor.
Su, Au, Wi, Sp Qtrns. Prereq: Permission of instructor. Repeatable to a maximum of 16 or hrs.

931 Applied Evaluation Design G 3
Techniques for planning, implementing, and reporting the evaluation of programs in varied educational settings.
1 2-hr cl. Prereq: 765 or Ed-SAR 765 Ed-SAR 785 or Ed-SAR 785 or equiva or permission of instructor. Not open to students with credit for Ed-T&P 930 or Ed-SAR 930.

932 Trends, Issues, and Problems in Teacher Education G 3
Provides awareness and knowledge of critical events and circumstances related to teacher preparation.
Wi Qtr. 1 2 1/2-hr cl.

937 Roles of Field and Clinical Experiences in Teacher Education G 3
An analysis of student teaching and related direct experiences in teacher education with special emphasis on the theoretical basis, purposes, organization, curriculum, patterns, evaluation, administration, and principles in the design of experiences.
Wi Qtr. 3 cl. Prereq: Master's degree, college supervision of student teachers, or permission of instructor.

943 Interaction of the Student and the College Environment G 3
A focus on the nature of the college environment, entering student, academic procedures, student performance, and student culture for those planning careers in college student personnel work.
Sp Qtr. 2 1 1/2-hr cl.

945 Practicum in Higher Education G 5
Supervised practicum in higher education offices such as admissions, dean of students, academic affairs, housing, international students, financial aid, student union. Sagaria.
Su, Au, Wi, Sp Qtrns. 1 1/2-hr cl. 8-10 hrs lab arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

946 The Writings of C. G. Jung: Implications for Educational Research and Practice G 3
The writings of Jung are critically examined; implications for educational research and practice are discussed, with emphasis on student/professional development, interpersonal communications, and learning. Rodgers.
1 2/1-hr cl. Prereq: Grad standing.

947 The Theory of Psychological Types: Applications to Education G 3
The theory of psychological types (C. G. Jung) and related literature will be critically examined, with applications to learner/teacher behaviors, achievement, academic advisement, assessment methods, and research. Rodgers.
2 2 1/2-hr cl.

949 Collective Bargaining and Contract Administration in Education G 3
Introduction to the processes of collective bargaining in educational organizations. Young.
1 2/1-hr cl. Prereq: 813, 846, 847, or permission of the instructor.

952 Legal Aspects of School Administration G 3
A study of statutory and case law, legal principles, and provisions relevant to educational administration, particularly in the areas of personnel, finance, curriculum, contracts, property, liability, and organization.
1 2 1/2-hr cl. Prereq: 846 or equiv.

953 School Community Relations G 3
Principles and practice in developing and maintaining appropriate school community relationships; opinion analysis; communication processes; decision-making patterns.
1 2/1-hr cl. Prereq: 846 or equiv.

955 Staff Personnel Administration G 3
Study of personnel administration in educational institutions; theory, principles, and practices as they relate to personnel policy, recruitment, selection, orientation, appraisal, in-service education, promotion, collective negotiations, and general welfare. Young.
1 2 1/2-hr cl. Prereq: 846.

956 School Finance G 3
Examination of the theory and economics of financing public education; emphasis on sources of revenue, variations in ability and effort, state-local plans, and the federal role. Sweetland.
1 2/1-hr cl. Prereq: 846.

957 Business Administration of Schools G 3
Function and role of business administrators in schools; emphasis on budgeting; payroll and accounting; purchasing; planning, constructing, operating, and maintaining the school plant. Sweetland.
1 2/1-hr cl. Prereq: 846.

958 Educational Facility Planning G 3
Problems and techniques in determining educational facility needs, evaluating facilities, planning for new construction and remodeling, and utilizing specialized personnel; related legal and financial aspects.
1 2/1-hr cl. Prereq: 846 or equiv.

959 Doctoral Core I G 4
Analysis of significant research in organization theory.
2 2-hr cl. lab arr. Prereq: Master's degree and permission of instructor.

960 Doctoral Core II G 4
Advanced study of administrative problems, leadership, and organization behavior from personality and developmental perspectives.
Wi Qtr. 2 2-hr cl. lab arr. Prereq: Master's degree and permission of instructor.

961 Doctoral Core III G 4
Advanced study of the political and social settings of education. Mitchell.
2 2-hr cl. lab arr. Prereq: Master's degree and permission of instructor.

962 Board Relations G 3
A study of the respective ideas and responsibilities of the board of education (board of trustees) and the superintendent (chief educational administrator) in the governance of the school district (college/university).
2 1/2-hr cl. Prereq: 810, 813, 846, 849, 861, and 925D44.

963 Legal Aspects of Special Education Administration G 3
Legislative, executive, and judicial action pertaining to the rights of students with disabilities, with focus on the responsibilities of school administrators and state officials.
1 cl. Prereq: 840, 952N, or permission of instructor.
Education: Teaching and Learning

Office of Academic Services, 292-2332
333 Arps Hall, 1945 North High Street

The areas of specialization and the courses in the School of Teaching and Learning comprising these areas of specialization are listed below:

Integrated Teaching and Learning

299.02, 299.10, 299.52, 299.55, 299.58, 299.70, 294.10, 294.52, 294.55, 294.58, 294.70, 460.46, 488.10, 488.70, 501.51, 509.69, 607.60, 607.67, 685, 690, 692.10, 692.50, 692.52, 692.55, 692.58, 692.70, 693.10, 693.50, 693.52, 693.55, 693.58, 693.70, 694.10, 694.50, 694.52, 694.55, 694.58, 694.70, 701, 702, 704, 705, 706, 708, 709, 728, 729, 731, 736, 737, 738, 747, 754, 766, 809, 811, 812, 813, 814, 815, 818, 820, 821, 822, 823, 824, 825, 826, 829, 831, 832, 833, 835, 836, 838, 842, 848, 849, 852, 856, 869, 870, 871, 874, 894.10, 894.50, 894.65, 894.55, 894.65, 894.70, 895.05, 895.10, 895.25, 895.55, 895.58, 895.70, 895.85, 895.95, 895.10, 895.50, 895.55, 895.58, 895.70, 895.85, 895.95, 896.10, 896.50, 896.55, 896.65, 896.70, 896.85, 896.95, 896.10, 896.50, 896.55, 896.65, 896.70, 896.85, 896.95, 897.05, 897.10, 897.55, 897.65, 897.70, 897.85, 897.95, 898.05, 898.10, 898.15, 898.20, 898.25, 898.35, 898.45, 898.55, 898.65, 898.75, 898.85, 898.95, 899.05, 899.10, 899.15, 899.20, 899.25, 899.30, 899.35, 899.40, 899.45, 899.50, 899.55, 899.60, 899.65, 899.70, 899.75, 899.80, 899.85, 899.90, 899.95, 899.10, 899.50, 899.55, 899.58, 899.70.

Language, Literacy and Culture

289.28, 289.45, 294.28, 294.45, 355, 560, 561, 566, 587.59, 587.05, 587.68, 587.11, 587.15, 587.45, 633, 634, 635, 639, 640, 642, 643, 645, 646, 647, 648, 650, 655, 570, 671, 671, 675, 681, 682, 682.01, 682.03, 682.25, 682.28, 682.45, 692.55, 893.05, 893.45, 893.50, 893.55, 893.70, 894.10, 894.50, 894.55, 894.65, 894.70, 895.05, 895.10, 895.20, 895.50, 895.70, 896.10, 896.50, 896.55, 896.70, 896.85, 896.95, 897.05, 897.15, 897.50, 897.65, 897.75, 897.85, 897.95, 898.05, 898.10, 898.15, 898.20, 898.25, 898.35, 898.45, 898.55, 898.65, 898.75, 898.85, 898.95, 899.05, 899.10, 899.15, 899.20, 899.25, 899.30, 899.35, 899.40, 899.45, 899.50, 899.55, 899.60, 899.65, 899.70, 899.75, 899.80, 899.85, 899.90, 899.95, 899.10, 899.50, 899.55, 899.58, 899.70.

Mathematics, Science and Technology


ESL (English as a Second Language)

020, 021, 022, 023, 104, 105, 106(106G), 107(107G), 108.
221 Manufacturing Practices I  U 4
A study of basic concepts of manufacturing technology through experiences in forming, separating, combining, and assembling materials used in the production of manufactured goods.
5 2-hr cl and lab. Prereq: 120 or 220.

222 Manufacturing Practices II  U 5
A study of manufacturing management technology, manufacturing production technology, and manufacturing personnel technology through experiences in planning, engineering and production of selected manufactured goods.
5 2-hr cl and lab. Prereq: 221.

224 Mechanical Systems and Servicing  U 4
Study of energy sources converted to power and techniques necessary for the application of mechanical power systems to servicing mechanical power systems.
5 2-hr cl and lab. Prereq: 120.

225 Transmitting and Utilizing Mechanical Power  U 4
Study of the selection, installation, operation, and maintenance of mechanical power transmission systems for technological and transportation activities.
5 2-hr cl and lab. Prereq: 224.

227 Electrical Systems and Servicing  U 4
Study of techniques necessary for the application of electricity to practices used in fabricating and servicing of electrical systems.
5 2-hr cl and lab. Prereq: 120 or Ed-T&PE 120.

228 Electronic Systems and Servicing  U 4
Study of techniques necessary for the application of electronics to practices used in fabricating and servicing electronic systems.
5 2-hr cl and lab. Prereq: 227.

231 Construction Practices I  U 5
A study of basic concepts of construction technology through experiences in forming, separating, and combining materials used in the production of residential structures.
5 2-hr cl and lab. Prereq: 120 or 220.

232 Construction Practices II  U 5
A study of construction management, production, and personnel technologies through real and simulated experiences in the production of constructed goods.
5 2-hr cl and lab. Prereq: 231.

235 Graphic Reproduction Practices  U 4
An examination of graphic reproduction processes, manipulative skills necessary to teach graphic reproduction processes, and administrative procedures required to operate a graphic arts program.
5 2-hr cl and lab. Prereq: 120; 220.

236 Printing and Publishing Practices  U 4
An examination of the managed production system utilized in the printing and publishing industry.
5 2-hr cl and lab. Prereq: 236.

250 Work Experience in Industry  U 3-6
Firsthand study of working conditions, methods, and processes of industry, and their implication for the teaching of technology education.
Su, Au, WI, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

255 Handicrafts  U 4
Designed to develop skills and knowledge in the use of the common areas of handicrafts such as leather, metals, plastics, wood, and the graphic arts.
Au, WI, Sp Qtr. 5 2-hr cl and lab. Open only to coc ther, phys ed, and rec educ majors. Repeatable to a maximum of 12 cr hrs.

269 Field Experience I  U 2-5
Professional service with children or youth in a school or community agency.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

289.02 EMCE Exp. in a Community Agency
289.10 Elementary Education
Planned elementary education field experience under supervision.
Su, Au, WI, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs including 289.02 and 289.70. This course is graded S/U.

289.21 Technology Education
289.28 Social Studies
289.45 Foreign and Second Language Education
289.52 Visual Disabilities
289.55 Hearing Disabilities

289.58 Orthopedic Disabilities
289.70 Early Childhood Education

294 Group Studies U 1-5
Group studies for students in specialized programs.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
294.10 Elementary Education
294.28 Social Studies
294.45 Foreign and Second Language Education
294.52 Visual Disabilities
294.55 Hearing Disabilities
294.58 Orthopedic Disabilities
294.70 Early Childhood Education

310 Utilizing Your Learning Power  U 5
Exploration of learning theory and practice, the overlap and integration of theory and practice where critical decisions are made.
Sp Qtr. 2 2-hr cl, 1 rec, arr off-campus observations.

355 Custom Production of Manufactured Goods  U 4
Study of custom production planning and processing of industrial goods through experiences in the custom production of selected manufactured goods.
5 2-hr cl and lab. Prereq: 3rd yr standing in major. Not open to students with credit for 255.

412 Language, Literacy, and Culture  U 5
Exploration of the interaction of oral language, literacy, and culture; examination of language and literacy in its social and political context.
Au Qtr. 2 2-hr cl, 1 rec.

460 Elementary Education: Child Guidance  U 4
Designed to develop an understanding of child growth and development principles in relation to instruction.
Au, WI, Sp Qtr. Lab arr.

467 Introduction to Children’s Literature  U 3
Study of literature for children with emphasis on standards for selecting materials with reference to the interests, needs, and abilities at different age levels.
Su, Au, WI, Sp Qtrs.

489 Advanced Field Experience  U 3-5
Directed field experience emphasizing appropriate teaching strategies for different school age children and school settings.
Su, Au, WI, Sp Qtrs. 100-150 hrs arr. Prereq: Admission to appropriate teacher education program. Repeatable to a maximum of 15 cr hrs.
489.01 Middle School Mathematics Education
489.02 Science Education Elementary School Program
489.03 Secondary School Mathematics Education
489.04 Science Education Middle School-Jr. High School Tutorial
489.05 Science Education Secondary School Science Classes and Laboratories
489.10 Elementary Education
489.70 Early Childhood Education

501 Kindergarten and Preschool Teaching  U 3
Recent development in the education of young children and its influence on the selection and guidance of appropriate activities.

511 Elementary Education: Science  U 4
The role of science in childhood education; study of content, methods, materials, and equipment.
Lab arr.

525 Automation of Production Systems for Technology Educators  U 5
An introduction to robotics and automation, their applications to manufacturing, construction, communication, energy-power, systems, and methods of teaching about them, includes laboratory experiences.
4 2-hr cl. Prereq: 222 and 227.

586 Elementary School Student Teaching
In Foreign Languages  U 3
Observation, participation, and responsible teaching of a foreign language in an elementary school, conferences or seminars.
Prereq: 617. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.
587.09 Student Teaching in Secondary Schools U 3-15
Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.
Prereq: EDU 4th yr standing, 550 and permission. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to a maximum of 15 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

587.21 Student Teaching in Secondary Schools U 3-15
Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.
Prereq: EDU 4th yr standing, 550 and permission. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 15 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

587.25 Student Teaching in Secondary Schools U 3-15
Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.
Prereq: EDU 4th yr standing, 560 and permission. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 15 cr hrs. For additional information see College of Education Bulletin. This course is graded S/U.

587.27 Student Teaching in Secondary Schools U 3-15
Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.
Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 21 cr hrs. This course is graded S/U.

587.28 Student Teaching in Secondary Schools U 3-15
Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.
Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 21 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

587.45 Student Teaching in Secondary Schools U 3-15
Observation, participation, and responsible teaching in a public school; individual and group conferences and seminars.
Prereq: EDU 4th yr standing and permission of program coordinator. Students desiring teaching in more than one area should indicate accurately both section numbers and hours in each. Repeatable to 21 cr hrs. For additional information see the College of Education Bulletin. This course is graded S/U.

587.46 French U 3-15
A field-based laboratory designed to provide tutoring, materials development, test construction and evaluation, appraisal, and instructional planning experiences within the English curriculum.
Sp Qtr. Arr. Repeatable to a maximum of 15 cr hrs.

H589 Honors Course U 3-5
A program of accelerated study for students with special aptitudes.
Prereq: Enrollment in the Honors Achievement Program and permission of instructor. Repeatable to a maximum of 15 cr hrs.

606 Language Arts in the Bilingual/Multicultural Classroom U 3-15
Research and theories of first and second language acquisition as related to methods of teaching, listening, speaking, reading, and writing in bilingual/multicultural classroom.
1 2½-hr cr. Prereq: written permission of instructor.

607 Writing Course in the Elementary Education Major U 5
Designed to help students reflect critically, both orally and in writing, on the social, political, and cultural contexts that influence education in today's society.
Au. Wi. Sp Qtr. 3 1½-hr cr. Prereq: Admission into the College of Education.

610 History of Practical Arts and Vocational Education U 3-15
History of those vocational and non-vocational phases of agriculture, business, industry, and homemaking which concern education.
3 cr.

611 Great Lakes Education Workshop U 3-4
Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and informal education settings.
Sp Qtr. 10 hrs cr per cr, 1½ days per cr. 10-4 hr cr. Prereq: Teaching certificate or sr standing. Not open to students with credit for Nat Res 691 or 611 or Educ 727-Sea Grant. Repeatable to a maximum of 5 cr hrs.

612 Linguistic Materials for Teachers U 3-15
Study of linguistic systems, language acquisition, and sociolinguistics as they bear on the work of classroom teachers.

613 Methods of Conservation Education U 3-15
Experience centered course for conservation/natural resources education including objectives, instructional, and evaluative procedures appropriate to formal and non-formal settings.
Sp Qtr. 1 3-hr cr. Prereq: Sr or grad standing. Not open to students with credit for or Nat Res 613.

614 Marine and Aquatic Education U 3-15
Overview of oceanic and Great Lakes resources, their functions in history, climate, commerce, and culture, and the school curriculum.
1-3-hr cr, field trips. Prereq: 20 or hrs of social, physical, and/or biological sciences or teacher certification, and permission of instructor. Not open to students with credit for Nat Res 614. Travel and subsistence costs for field trips must be borne by students.

615 Teaching of Modern Foreign Language I U 3-4
Theory and practice of teaching foreign language in beginning classes; use and preparation of instructional materials based on research studies.
Au Qtr. 2 2-hr cr. Prereq: 296.45, or Ed-P&L 451.

616 Teaching of Modern Foreign Language II U 3-4
Study of the use of new instructional materials for intermediate and advanced foreign language classes; teaching of reading, writing, literature, and culture; evaluation.
Au Qtr. 2 2-hr cr. Prereq: 615.

617 Teaching of Foreign Languages in the Elementary School U 3-15
Skill development in teaching of spoken and written foreign languages on the elementary school level; construction and use of suitable materials; discussion of issues and problems, evaluation.
Prereq: 15 cr hrs of educ and written permission of instructor.

618 Teaching of Latin U 3-4
Values, teachers' equipment, objectives, and methods; classroom procedures; lectures and assigned readings.
3 cr, lab arr. Prereq or conc us: Latin 201 and 222, and an additional 6 hrs crs in Latin.

619 Foreign Language Education Residence in Europe U 3-15
Practicum in language, language teaching, history, and culture in a foreign country; each student lives with a family, and participates in instruction-related activities and in the study of social and cultural differences.
Prereq: Written permission of instructor; preregistration Au Qtr. Repeatable to a maximum of 30 cr hrs.

619.11 France

619.12 Spain

621 Teaching Mathematics in Secondary Schools U 3-15
Selected problems in curriculum; evaluation, materials of instruction, and the teaching of specific topics in arithmetic, algebra, and geometry.
2-2 hr cr. Prereq: Admission to M.Fd. or permission of instructor.

624 Social Education U 3-15
Analyses of social structures and processes in classroom grouping arrangements; teacher social roles, school traditions, ceremonies, clubs, and athletics.
1 2½-hr cr. Prereq: Permission of instructor or teaching experience.

633 Drama, Story and Creativity U 3-15
The creative use of drama and story in the classroom.
1-3 hr cr, 1- to 2-hr lab. Prereq: Experienced teacher or sr standing with some field experience.

634 Theatre in Education U 3-15
Devising and producing interactive performances for students.
Prereq: Theatre 220. Not open to students with credit for Theatre 501 or 565. Offered in cooperation with Theatre.

636 Practicum in Science for Teachers U 3-15
Use and design of apparatus, demonstrations, and experiments for general science, chemistry, biology, and physics, with special emphasis on modern secondary school instructional materials in the sciences.
2-3 hr cr. Prereq: Permission of instructor.
638 Teaching of Secondary Social Studies I U G 4
Designed to help future social studies teachers conceptualize social studies and develop understanding of methods and materials for classroom instruction. 
Au, Wi, Sp Qtrs. 2 2-hr cl.

639 Teaching of Secondary Social Studies II U G 4
Trends, problems, issues, and instructional strategies in secondary social studies with emphasis on simulations, case studies, the media, role playing, controversial issues, and multicultural education.
Au, Sp Qtrs. 2 2-hr cl.

640 Methods and Techniques of Teaching English to Speakers of Other Languages U G 4
Study of the use of new instructional materials for intermediate and advanced TESOL classes; teaching of reading, writing, literature, and culture; evaluation. 2 2-hr cl. Prereq: Permission of instructor.

642 Teaching Across the Curriculum G 3
Provides M Ed students with the knowledge and tools they need to support the developmental reading and literacy skills of middle and secondary students. 
Au, Wi Qtrs. 1 2/1-hr cl. Prereq: Admission to LLC M Ed program.

643 Social Education and Language, Literacy, and Culture G 5
The relationship of social structures, schooling, and educational issues examined in relationship to the use of language, literacy, and culture. 
Au, Sp Qtrs. 1 2/1-hr cl, 1 2-hr lab. Prereq: Admission to LLC M Ed program.

645 Teaching Writing in the Secondary School G 4
Designed to assist students to understand writing development to develop process-oriented approaches to writing instruction. 
Au Qtr. 2/2-hr cl, Prereq: Admission to LLC M Ed program. Field experiences required. Requirement for M Ed students in LLC with a specialization in English Education.

646 Teaching Literature in the Secondary School G 4
Focus on leading discussions of literature, teaching literature-writing assignments, and using writing to foster literary understanding. 
Wi Qtr. 2 2-hr cl, Prereq: Admission to LLC M Ed program. Field experiences required. Required for M Ed students in LLC with a specialization in English Education.

647 The Arts and Early Childhood Education G 3
Students will learn how the arts are integral to early childhood education and how to create integrated contexts for teaching and learning. 
Au, Wi, Sp Qtrs. 1 3-hr cl.

648 Drama in the Secondary Classroom G 3
The use of drama in the secondary classroom. 
Wi Qtr. 1 3-hr cl.

656 Literature for Adolescents U G 3
Literature for individual, group, and whole-class reading in junior and senior high schools; interest factors, readability, and literary value as criteria for selection; bibliographic aids. 
Au, Wi, Sp Qtrs.

660 Language Competence of Children and Youth with Disabilities U G 3
Familiarization of students with the impact of disabling conditions on children and youth’s development of language. 
Cond: Au Qtr. 1 2 1/2-hr cl.

665 Applied Linguistics for Teachers of Reading/Language Arts U G 3
Structure of language, language acquisition, and language variation applied to language arts/reading principles, methods, and materials. 
2 1/4-hr cl.

670 Remedial and Clinical Reading Instruction U G 3
An overview of theory and practice, including causes, diagnostic procedures, remediation, and instructional materials. 
Su, Au, Wi Qtrs. 1 2 1/2-hr cl.

671 Clinical Practice in Treating Reading Disabilities U G 3
Use of test materials in the diagnosis of reading disabilities; practice with remedial procedures. 
Su, Au, Wi, Sp Qtrs. 1 2 1/2-hr cl, 3 1-hr lab arr. Prereq: Ed-T & L 739 or 670 and permission of instructor.

674 Family Participation in Early Childhood School Programs U G 3
The purpose and importance of family involvement in early childhood school programs, types of programs, resources, methods, and curricula.

685 Orientation and Mobility for Teachers of Students with Visual Disabilities U G 3
Readiness activities, assessment procedures, instructional strategies, and direct experience with selected travel techniques for persons with visual disabilities.

689.01 Middle and Senior High School Mathematics Field Experience U G 5
Experience in appropriate mathematics classes with an emphasis on acquiring skills to work with students in a school setting while developing skills in preparing, conducting, and evaluating teaching activities. 
3 hrs/day for 5 days/wk for 8 wks. Prereq: Admission to the post-degree program in science education and concn. 551 or 548. Not open to students with credit for Ed-T & L 689.

690 Practicum in Problems of Public Education U G 3
Group review of specific problems in public education. 
3 cl. Open to experienced teachers and administrators. Request to offer practicum must be received by dept. at least one year in advance of planned time to allow for planning. Repeatable to a maximum of 9 hrs, including or hrs in Ed-P & L 690. Cross-listed in Educational Policy and Leadership. This course is graded S/U.

692 Workshops U G 1-8
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it. 
Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable with not more than 4 workshops to a maximum of 12 hrs.

692.10 Elementary Education
692.21 Technology Education
692.22 Mathematics, Science and Technology Education
692.25 English Education
692.26 Mathematics Education
692.27 Science Education
692.28 Social Studies Education
692.45 Foreign and Second Language Education
692.50 Integrated Teaching and Learning
692.52 Visual Disabilities
692.55 Hearing Disabilities
692.56 Drama, Language Arts, Literature and Reading Education
692.58 Orthopedic Disabilities
692.70 Early Childhood Education

693 Individual Studies U G 1-4
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. A total of not more than 30 or hrs of individual study (any 693) will apply toward graduation for undergrad students, or 15 or hrs for the master's degree and 30 or hrs for the doctoral degree. These courses are graded S/U.

693.10 Elementary Education
693.21 Technology Education
693.23 Mathematics, Science and Technology Education
693.25 English Education
693.26 Mathematics Education
693.27 Science Education
693.28 Social Studies Education
693.45 Foreign and Second Language Education
693.50 Integrated Teaching and Learning
693.52 Visual Disabilities
693.55 Hearing Disabilities
693.56 Drama, Language Arts, Literature and Reading Education
693.58 Orthopedic Disabilities
693.70 Early Childhood Education
594 Group Studies U G 1-5
Group studies on special problems in education.
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs.

694.10 Elementary Education
694.21 Technology Education
694.23 Mathematics, Science and Technology Education
694.28 English Education
694.29 Mathematics Education
694.27 Science Education
694.28 Social Studies Education
694.45 Foreign and Second Language Education
694.50 Integrated Teaching and Learning
694.52 Visual Disabilities
694.55 Hearing Disabilities
694.58 Language Arts, Literature and Reading Education
694.58 Orthopedic Disabilities
694.70 Early Childhood Education

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Au, Wi, Sp Qtr. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-5
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable to different titled study tours only.

698.01 Domestic
698.02 Foreign

700 Interprofessional Education
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.
Repeatable to a maximum of 9 cr hrs; subdivisions are not repeatable, except 700.04 which is repeatable to a maximum of 10 cr hrs. Limited to students enrolled in allied medical professions, education, law, medicine, nursing, social work, and theology. Cross-listed in Ed-P&L and Ed-PAES.

700.01 Seminar on Interprofessional Care U G 3
Treatment of the whole person through the analysis of the interrelated problems of actual cases.

700.02 Changing Societal Values U G 3
Identification and clarification of values considerations as they relate to professional problems in dealing with consumers/clients/patients.

700.03 Seminar on Ethical Issues Common to the Helping Professions U G 3
Ethical issues of concern to the professions and arising out of advanced technology, euthanasia, enforced treatment, privacy and confidentiality, malpractice, and the social responsibility of the professions.

700.04 Interprofessional Practicum in Clinical Settings U G 3 or 5
Interprofessional teamwork in clinical settings.
Prereq: Permission of instructor.

700.05 Interprofessional Seminar in Policy Analysis U G 3
Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.
Wi Qtr. 3 cr. Prereq: Permission of instructor.

700.06 Care of Chemically Dependent Families U G 3
Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.
Wi Qtr.

700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3
Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.
Au Qtr. 1 2 1/2-hr cr. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

701 A Survey of Current Research and Trends in Early and Middle Childhood Education U G 3
Designed to emphasize the appraisal of recent research and its application to teaching practice and educational policy in the area of early and middle childhood education.
Su, Au, Wi, Sp Qtrs. 1 1/2-hr or 2 1-1/2-hr cr.

702 Children’s Language and Learning G 3
Examination of children’s oral and written language development and related theoretical understandings. Instrumental for teaching language arts.
Su, Au, Wi, Sp Qtr. 2 1 1/2-hr cr. Prereq: Admission into approved program in College of Education.

703 Studies in TESOL and Bilingual Education U G 3
Examination of theories underlying the teaching and learning of English as a second language and bilingual education: analyses of curricular designs and innovative programs.
1 3-hr cr. Prereq: Jr standing.

704 Integration of Child Development and Learning Theories G 3
Focus on how children’s behavior and learning develop in education contexts ranging from early childhood through the adolescent years.
Su, Au, Wi, Sp Qtr. 2 1 1/2-hr cr. Prereq: Admission into approved program in college of Education.

705 Language/Literacy I G 3
Focus on principles and practices for facilitating the effective development and use of oral and written language by children in grades K-3.
Su, Au, Wi, Sp Qtr. 2 1 1/2-hr cr. Prereq: 702 and 704.

706 Language/Literacy II G 3
Focus on principles and practices for facilitating the effective development and use of oral and written language by children in grades 4-8.
Su, Au, Wi, Sp Qtr. 2 1 1/2-hr cr. Prereq: 702, 704, and 705.

708 Teaching and Learning of Mathematics in Grades K-3 G 3
Examination of instructional strategies that facilitate the teaching, and learning of mathematics in grades K-3.
Su, Au, Wi, Sp Qtr. 2 1 1/2-hr cr. Prereq: 702 and 704.

709 Teaching and Learning of Mathematics in Grades 4-8 G 3
Examination of instructional strategies that facilitate the teaching and learning of mathematics in grades 4-8.
Su, Au, Wi, Sp Qtr. 2 1 1/2-hr cr. Prereq: 702, 704, and 708.

710 Selecting and Developing Second Language Instructional Materials U G 3
Selection and development of second language instructional materials including theoretical considerations and practical applications; evaluation of instructional materials, creating materials, and adapting materials to student needs.
1 3-hr cr. Prereq: 615 or permission of instructor.

711 Concepts of School Mathematics G 3
Organizing concepts of school mathematics, their development through the mathematics curriculum, and their role in the learning of mathematics.
3 cr. Prereq: A course in foundations of math or concur Math 645, grad standing in math educ or math permission of instructor. Subdivisions intended to be taken in sequence. Subdivisions not repeatable.

711.01 Functions
Prereq: Permission of instructor.

711.02 Equivalence
Prereq: 711.01 or permission of instructor.

711.03 Measure and Measurement
Prereq: 711.01, 711.02, or permission of instructor.

711.04 Variable
Prereq: 711.01, 711.02, 711.03, or permission of instructor.

712 Methods of School Mathematics G 3
Examination of curriculum, instruction, and forces that influence curriculum and instruction in school mathematics, grades 7 through 12.
2 2 1/3-hr cr. Prereq: Grad standing in math educ or permission of instructor.

712.01 Introduction to Teaching of Secondary School Mathematics

712.02 Classroom Procedures

712.03 Providing Effective Instruction in Mathematics

721 Logic, Psychology, Learning and Cognition in School Mathematics, Science, and Technology Education

721.01 Logic and Psychology in School Mathematics G 3
A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching mathematics.
3 cr. Prereq: Teaching experience or written permission of instructor.

721.02 Logic and Psychology in School Science G 3
A study of the nature of psychological growth and the development of logical ability in children and the implications for teaching science.
3 cr. Prereq: Teaching experience or written permission of instructor.
721.03 Learning and Cognition in Mathematics, Science, and Technology Education U G 3
The learning of mathematics, science, and technology education as influenced by cognitive development and the implications of teaching in the middle grades and high school.
Su, Wi, Qtrs.

722 Literature Across the Curriculum U G 3
Non-fiction for ages 4-12 as it contributes to social studies, the sciences, language arts, and the creative arts; emphasis on identifying quality selections and planning related to learning experiences.
1 3-hr cl.

725 Teaching Advanced Foreign Language Courses U G 3
The teaching of language skills and aesthetic appreciation in advanced foreign language classes; emphasis on teaching interdisciplinary studies: literature, history, fine arts, music, and architecture.
Sp Qtr. 1 2½-hr cl. Prereq: At least one French or Spanish course at the 200 level.

727 Special Topics in Education P G 1-5
Special topics for professional educators and graduate students in selected areas; designed to provide the opportunity to update professional skills and review current research developments.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or registration in one of the professional schools. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

727.10 Elementary Education
727.21 Technology Education
727.23 Mathematics, Science and Technology Education
727.25 English Education
727.26 Mathematics Education
727.27 Science Education
727.28 Social Studies Education
727.45 Foreign and Second Language Education
727.50 Integrated Teaching and Learning
727.52 Visual Disabilities
727.55 Hearing Disabilities
727.56 Drama, Language Arts, Literature and Reading Education
727.58 Orthoptic Disabilities
727.70 Early Childhood Education

728 Analysis of Teaching Young Children U G 3
Current education and human development theories as they relate to the teaching-learning phenomenon.
1 2½-hr cl. and 1 clinical observation. Prereq: Basic course in child development. Designed for grad students/in-service teachers.

729 Teaching and Learning of Science in Grades K-3 G 3
Exploration of contemporary alternatives in elementary science education and the development of knowledge and skills for teaching in learning in grades K-3.
Su, Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 702 and 704.

730 Technological Activities for Teachers of Exceptional Children U G 4
The application of technological practices in developing instructional materials and activities useful in diagnostic and remediation procedures for exceptional learners.
3 2-hr cl and lab. Prereq: ED PAES 651 or 718 or equiv with written permission of instructor. Repeatable to a maximum of 8 cr hrs.

731 Teaching and Learning of Science in Grades 4-8 G 3
Exploring innovations in science education and the development of knowledge and skills for facilitating integrated, experience-based approaches to science instruction in grades 4-8.
Su, Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 702, 704, and 729.

732 Teaching Technology Education G 4
Study of sociocultural forces and problems attributable to technology education; historical, sociological, and psychological base of technology education; development of a philosophy of technology education.
2 2-hr cl.

735 Organization and Administration of Technology Education U G 3
International and historic background curriculum resources and development, physical organization, administrative organization, supervisory operation, and professional policies.
1 2½-hr cl.

736 Integrating Strategies: Teacher Questioning Behavior U G 3
Designed to analyze and facilitate mastery of question-asking strategies and techniques to improve instruction and the responding patterns of students.
3 cl.

737 Teaching and Learning of Social Studies in Grades K-3 G 3
Exploration of current theories in the teaching and learning of social studies in grades K-3.
Su, Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 702 and 704.

738 Teaching and Learning of Social Studies in Grades 4-8 G 3
Study of current theories in the teaching and learning of the historical, ethical, cultural, geographic, economic, and socio-political aspects of social studies in grades 4-8.
Su, Au, Wi, Sp Qtrs. 2 1½-hr cl. Prereq: 702, 704 and 737.

739 Evaluation and Instructional Decision-Making in Literacy U G 3
Evaluation processes and instructional materials useful to elementary and secondary teachers are explored as individual and small group needs.
1 3-hr cl. Prereq: 665.

740 Evaluation Processes and Literacy Learning U G 3
Designed to examine formal and informal measures, theoretical assumptions, and test construction practices. Course will explore impact of language and cultural diversity on student performance.
1 3-hr cl.

741 Teacher Decision-Making in Language, Literacy, and Culture: Issues Related to Diversity G 3
Examines the analysis of literacy learning with culturally and linguistically diverse populations.
1 2½-hr cl.

742 Supervision of School Science Programs U G 4
For those concerned with supervision of teacher education programs in science, objectives, curricula, recent trends, classroom management, evaluation of teaching, and professional literature.
4 cl. Prereq: Teaching experience or permission of instructor.

747 Curriculum and Instructional Strategies for Students with Physical, Sensory, and Multiple Disabilities U G 3
Development and adaptation of curriculum, materials, and instructional procedures for teaching students with physical, sensory, and multiple disabilities.
3 cl. Prereq: Permission of instructor.

748 Teaching Mathematics, Science, and Technology G 3
Educational theory and its relationship to practice in mathematics, science, and technology education.
2 2-hr cl, including some lab time. Prereq: Admission to the M Ed program or permission of instructor.

748.01 Introduction to Teaching Mathematics, Science, and Technology
Study of educational theory and its relationship to practice with a focus on the philosophy, history, and issues in mathematics, science, and technology education.
Su Qtr.

748.02 Methods of Integrating Mathematics, Science, and Technology
Designed for middle and secondary school teachers to increase understanding of issues and trends related to middle and secondary school mathematics, science, and technology education.
Au Qtr.

748.03 Teaching All Students in Mathematics, Science, and Technology
Investigates issues of diversity, equity, management, and assessment in the teaching of integrated Mathematics, Science, and Technology Education.
Wi Qtr.

749 Fundamental Ideas of School Mathematics G 3
Development and significance of concepts and processes in school mathematics and their relationship to ideas in other disciplines.
2 2-hr cl, including some lab time. Prereq: Admission to MSAT M Ed or permission of instructor.

750 Fundamental Ideas of School Technology G 3
Development and significance of concepts and processes in school technology and their relationship to ideas in other disciplines.
2 2-hr cl, including some lab time. Prereq: Admission to MSAT M Ed or permission of instructor.

751 Fundamental Ideas of School Science G 3
Development and significance of concepts and processes in school science and their relationship to ideas in other disciplines.
2 2-hr cl, including some lab time. Prereq: Admission to MSAT M Ed or permission of instructor.
Diplomacy and global education are important aspects of modern societal interactions. Understanding these complexities can help foster peace and cooperation among nations. The integration of global education into the curriculum at various educational levels is crucial for preparing students to engage effectively in a globalized world.
825 Methods of Developing Language and Cognition in Early Childhood G 3
Curriculum methods and materials in developing language and cognition in school programs for children ages three to eight, based upon research findings.

826 Visual Process and Educational Implications of Visual Disabilities G 3
Components of vision, anatomy, and physiology of the eye; causes of impaired vision, educational implications of eye disorders, and interpretation of eye specialists' reports.
1 3-hr cl.

827 Advanced Study in the Teaching of Developmental Reading G 3
Designed to provide experienced teachers the opportunity to extend and update their knowledge of the reading process and the principles underlying effective reading instruction.
Prereq: 665.

828 Trends and Issues in Teaching Reading in the Elementary School G 3
Designed for experienced teachers and curriculum workers; current developments, trends, and issues critically analyzed according to available research evidence.

829 Problems in Elementary School Curriculum and Supervision G 3
An analysis of the programs and practices involved in facing major curriculum problems in the elementary schools; synthesis of supervision and curriculum.

830 Early Childhood Education: Multi-Cultural Influences G 3
A study of early childhood curriculum content and teaching methods as influenced by multi-cultural factors.

831 Reading for Students with Hearing Disabilities G 3
Examination of reading theories, research, and implications for students with hearing disabilities.
1 3-hr cl. Prereq: 622, or its equiv., or permission of instructor.

832 Advanced Studies in Deafness G 3
Cognitive and psychosocial theories, research, and implications for students with hearing disabilities.
1 3-hr cl. Prereq: 754 or equiv., or written permission of instructor.

833 Reading and Writing Skills for Teachers of Low Vision and Blind Children G 3
Modes of written communication for low vision and blind children, focusing on mastery of Grade 2 literary braille for initial reading instruction.
1 3-hr cl. Prereq: 670 or equiv., and permission of instructor.

834 Planning Technology Education Facilities G 3
Principles of technology education and technical laboratory planning, including equipment selection for all school levels and meeting all curriculum requirements.
1 2½-hr cl.

835 Modes of Communication and Instructional Materials for Students with Visual Disabilities G 3
Continuation of modes of communication with focus on mastery of Nemeth Code for science and math notation.
1 3-hr cl. Prereq: 835.

838 Practicum in Technology Education G 3-5
Derivation of course objectives, formulation and evaluation of basic programs, curriculum development, organizational implementation, leadership problems, and professional progress, both here and abroad.
3 cl. Prereq: Secondary (587) student teaching or equiv.

837 Research in Technology Education G 3
Identification of research problems and needs; review of research examples with critical analysis of research design and procedures.
3 cl. Prereq: ED P&L 785 or 786, or permission of instructor.

838 Learning Styles G 3
Education dimensions of learning styles in children and adults related to developmental, neurological, social, and environmental substrates of learning.
1 3-hr cl. Prereq: Previous teaching experience or permission of instructor. Open to grad students in any field of specialization in education.

839 Evaluation in Elementary Schools G 3
Appraisal of materials and methods in terms of educational aims and research findings; consideration of instruments and procedures for comparing achievements with established objectives.

840 Writing in the Elementary School G 3
Study of the implications from recent research and theory in language learning and use in respect to writing, spelling, handwriting, and grammar.
1 2½-hr cl.

841 Poetry for Children G 3
An in-depth study of poetry for children including children's interest in poetry, forms of poetry, and representative poets, classroom approaches for encouraging children's involvement and appreciation of poetry.
1 2½-hr cl.

842 Research in Early Childhood Education G 3
Exploration of research methods and techniques related to early childhood school programs; review of research in the field; in-depth investigation of interest area.

843 Literature for Middle Childhood G 3
Analysis and study of fiction for children ages 8-12; emphasis on literary quality, strategies for classroom use, and relevant issues.
1 2½-hr cl.

844 Vocational Evaluation and Development G 3
A study of vocational evaluation, development, and work adjustment materials and practices utilized in educational and rehabilitation settings.
1 2½-hr cl. Prereq: Ed-PAES 790 or permission of instructor. Not open to students with credit for 828 or Ed-PAES 844.

845 Work Adjustment and Development G 3
A study of the principles and procedures of work adjustment and development techniques, methods, and resources utilized in educational and rehabilitation settings.
1 2½-hr cl. Prereq: 730 or permission of instructor. Not open to students with credit for Ed-PAES 845.

846 Development of Technology Education Vocational Education Programs for Special Needs and Culturally Diverse Students G 3
Analysis of educational needs of special needs and culturally diverse learners with emphasis on designing, conducting, and evaluating technology education, vocational, and pre-vocational programs.
1 2½-hr cl. Prereq: 533 or equiv with written permission of instructor. Not open to students with credit for 850.

847 Understanding Preschool Play G 3
A study of relevant theories, developmental stages, and research as they relate to developing programs for young children.
1 3-hr cl. Prereq: FM&Hu Du 332 or 662, or permission of instructor.

848 Observing and Facilitating Preschool Play G 3
Continuation of 847; extensive analysis of experiences in facilitating preschool play and clinical experience regarding the play of young children.
1 3-hr cl or field experience. Prereq: 848 or equiv with written permission of instructor.

850 Experiences in Integrated Content in Mathematics, Science, and Technology Education G 3
Content, ideas, skills, and applications of mathematics, science, and technology education emphasizing themes and concepts common to two or more of the disciplines.
Su, Au, Wi Qtrs. 2 2½-hr cl. Repeatable to a maximum of 9 cr hrs.

852 Science and Early Childhood Education G 3
The nature, scope, and role of science experiences in the learning and development of young children; integration and application of current developments; theory and research in science with early childhood education.
1 3-hr cl.

853 Critical Reading in the Content Fields G 3
Exploration of the problems of developing critical reading ability in a variety of curricular fields.

854 Reading in Its Social Setting G 3
The influence of culture on the nature, quality, and quantity of reading development; the relationship of reading to language development and mass media.

856 Advanced Literature for Adolescents G 3
An evaluation of literature for adolescents and the role it plays in the education of youth.
1 3-hr cl. Prereq: Teaching experience.

858 Technology Education in the Elementary School G 3
Selection, development, and evaluation of typical experience units in both classrooms and practical arts laboratory situations at all levels of the elementary schools.
3 cl. Prereq: 243 or equiv.
859 Technology Education Curriculum Planning G 3
Analysis of curriculum research; analysis of instructional materials; application of technology education principles to general education.
1 2 1/2-hr cr. Prereq: Secondary (587.21) student teaching, or equiv.

860 Language Arts in the Early Childhood Program G 3
The process of children's language acquisition leading towards development of reading skills: practical applications from theory and research on language processing.
1 3-hr cr. Prereq: Experience in working with young children or introductory level child development course.

861 Literature in Early Childhood Education G 3
Study of literature for children ages two through seven; emphasis on the importance of early exposure to literature for language acquisition and for cognitive and affective development.
1 2 1/2-hr cr. Prereq: 817.

862 Roots of Fantasy for Children G 3
A study of selected works of fantasy for children (grades 4-9) along with their sources in traditional literature; works based on Arthurian legends, the Welsh Mabinogion, and other folklore from the British Isles.
1 2 1/2-hr cr. Prereq: 817.

864 Multicultural Literature for Children G 3
Values and ideas of literature by and about Blacks, Asians, Hispanics, Native Americans, and other U.S. ethnic groups: theoretical perspectives, trends, issues, and controversies.
Au Qtr. 1 2 1/2-hr cr. Prereq: 817 or equiv.

865 Reflective Inquiry on Pedagogy with Prospective Teachers G 5
Prepares prospective teachers to bring an inquiry orientation to their practice and to see reflective inquiry as part of teaching.
Wi Qtr. 1 3-hr cr, 1 2-hr lab. Limited to students enrolled in LLM MEd program. Enables preservice teachers to engage in discipline-specific teacher research as a means for reflecting on practice.

866 Internship and Reflective Seminar G 10
Ten-week full-time internship in an elementary school classroom where students assume major teaching responsibilities under the guidance of a cooperating teacher and University supervisor.
Au, Wi, Sp Qtr's. Full-time daily: 8:00 a.m.-4:00 p.m. Prereq: Completion of certification courses. This course is graded S/U.

868 Developing Syllabi for Second-Language Programs G 3
Focus on various models currently available to second-language teachers for syllabus design, development, and evaluation.
Wi Qtr. 2 1/2-hr cr.

869 Children's Social Development and the Social World of the Classroom G 3
Exploration of social growth and social experiences of children, with educational emphasis on the social dimensions of learning and classroom practice.
1 2 1/2-hr cr. Prereq: Grad standing.

870 Graduate Studies in Integrated Teaching and Learning G 3
Designed to introduce the study of integrated teaching and learning, familiarize students with scholars in this field and assist students in planning their masters program.
Su, Au, Wi, Sp Qtrs. 1 2 1/2-hr cr. Prereq: Admission into MA program in ITL.

871 Children's Cognition and the Early and Middle Childhood Classroom G 3
Emphasis on intellectual development, preschool through adolescence, focusing on educational implications and classroom practice.
1 2 1/2-hr cr. Prereq: Grad standing.

872 Approaches to Integrated Curriculum in Pre K-12 Classrooms G 3
Critical view and application of theories, research, and practices related to integrated curriculum approaches in early childhood, elementary and middle school classrooms.
1 2 1/2-hr cr. Prereq: 870.

873 Popular Culture and the Teaching of English G 3
Analysis of the role of mass media/popular culture in our society; values and themes in popular culture; development of critical skills to analyze popular culture. Mertz.
1 3-hr cr.

874 Classroom Based Inquiry in Integrated Teaching and Learning G 3
Classroom based inquiry strategies considering the literature on classroom based research, models, historical perspectives, ethical questions, and implications for teaching practice.
1 2 1/2-hr cr. prerequisite: Grad standing.
Education: Teaching and Learning

894.55 Hearing disabilities
894.56 Drama, Language Arts, Literature and Reading Education
894.58 Orthopedic Disabilities
894.70 Early Childhood Education

899 Interdepartmental Seminar in Teaching College Mathematics G 2-4
Discussion of problems raised by courses for liberal or general education, service courses, or special education courses commonly offered in college mathematics; given cooperatively by Math and Ed-T&L.
1 3-hr. cr. Prereq: Permission of instructor.

901 Changing Perspectives in Language, Literacy, and Culture G 3
Introductory seminar highlights interdisciplinary nature of studies in language, literacy, and culture and provides historical perspective for theoretical shifts that influence research and teaching.
Au Qtr. 1 2½-hr. cr. Prereq: Admission to LLC PhD program. This course is the first of a required three-course sequence for PhD students in LLC.

902 Multiple Literacies, Technology, and Communities of Learning G 5
Applies various theoretical perspectives and research tools to explore multiple literacy and technology uses in relationship to community development in different settings.
Su, Au, Wi, Sp Qtr. 1 2½-hr. cr, 6 hrs. lab. Prereq: 901. Limited to doctoral students. Active e-mail account required. This course is the second of a required three-course sequence for PhD students in LLC.

903 Teaching/Learning in Language, Literacy, and Culture G 3
Examines constructivist and sociocultural theories and approaches to teaching and learning. Epistemological roots, historical perspectives and approaches underlying these theories will be examined.
Au, Sp Qtr. 1 2½-hr. cr. Prereq: 901, 902. This course is the third of a required three-course sequence for PhD students in LLC.

904 Alternative Paradigms for Global Education G 3
Analysis of the educational implications of basic concepts and propositions about the world derived from alternative approaches to the study of international relations.
Sp Qtr. 1 2½-hr. cr. Prereq: Grad standing.

905 Research Methodologies in Language, Literacy, and Culture G 3
Examines recent research in the areas of language, literacy, and culture through a variety of lenses—epistemological, cultural, conceptual, and ethical.
Wi Qtr. 1 2½-hr. cr. Prereq: Edu P&L 785 and 800, and admission to LLC PhD program.

906 Language Learning Across Cultures G 3
Sociocultural research and theories of first and second language learners; learning of language and literacy across cultures.
1 2½-hr. cr. Prereq: 901, 902, 903. One in a number of general section courses in LLC PhD that provides generic frameworks for courses within the PhD program.

907 History of Children's and Adolescent Literature G 3
A seminar focusing on the history of English and American children's and young adult's literature from earliest times to the twentieth century.
Sp Qtr. 1 3-hr. cr. Prereq: 817; grad standing.

908 The Development of Literary Understanding G 3
Provides background knowledge of the seminal research on children's literary understanding and the theories and perspectives that inform that research.
Sp Qtr. 1 3-hr. cr. Prereq: Admission to LLC PhD program or by permission.

909 History of Theory and Practice in Literacy G 3
Examines the historical bases of current literacy theories and theoretical perspectives. Examines cultural and political ideologies that have influenced theory, research and instructional practice.
Wi Qtr. 1 3-hr. cr.

910 Creating Effective Contexts for Literacy Learning and Teaching G 3
Designed to examine the role of social context in cognitive development and theories of learning/teaching and relate them to literacy development in preschool-grade 12.
Au Qtr. 1 2½-hr. cr.

911 Research in Emergent Literacy G 3
Focus on interpreting new research studies in emergent literacy in light of current research.
Wi Qtr. 1 2½-hr. cr. Limited to Advanced MA or PhD students in LLC.

912 Research in Writing Development and Instruction for Children G 3
Examination and critical analysis of research on children's writing development and on writing instruction in schools.
Sp Qtr. 1 2½-hr. cr. Limited to Advanced MA or PhD students in LLC.

913 Research and Theory in Written Composition G 3
Explores the development of composition as an academic field and how research and theory might shape teaching.
Au Qtr. 1 3-hr. cr. Prereq: Admission to grad program in LLC.

914 Writing and Learning Across the Curriculum G 3
Examines research and theory that explains when, why, and how writing can shape thinking and reasoning in the content areas.
Wi Qtr. 1 3-hr. cr. Prereq: Admission to grad program in LLC.

915 Drama in Language, Literacy, and Culture G 3
Current educational assumptions about language, literacy, and culture are examined and critiqued through the lens of drama education pedagogy.
Su, Au, Wi, Sp Qtr. 1 3-hr. cr.

916 Classroom-Oriented Second Language Research G 3
Classroom research investigates the processes of teaching and learning as they occur in language classrooms.
Sp Qtr. 1 3-hr. cr. Prereq: Ed-Stds/Edu T&L 703P.

917 Issues in Communicative Language Teaching G 3
Lecture and discussion course focused on current issues related to second language acquisition research.
Au Qtr. 1 2½-hr. cr. Prereq: Ed-Stds/Edu T&L 703P, 868.

920 Advanced Concepts in Elementary School Science Education G 3
Emphasis on functions of leadership personnel in developing and improving elementary school science science programs and on evaluation of current developments and research.
Prereq: 811 or permission of instructor.

921 A Guided Survey of Research in Reading G 3
Designed to provide acquaintance with scientific studies relating to reading, methods used, results attained, including implications and limitations, and the problems met in further investigation.
Prereq: 6 hrs. in grad reading courses. Repeatable to a maximum of 6 or hrs.

922 Writing Research Proposals in Language, Literacy, and Culture G 3
Designed to acquaint PhD students with the practical and conceptual skills needed to design and write research proposals.
Au, Wi, Sp Qtr. 1 3-hr. cr. Prereq: Ed-SAR 785 or 786 or Edu P&L 785 or 786. Repeatable to a maximum of 6 or hrs.

923 Literary Theory and Adolescent Literature G 3
Explores the use of young adult literature for in-depth literary study in secondary classrooms.
Sp Qtr. 1 2½-hr. cr. Prereq: Admission to LLC PhD program. Designed for students in Language, Literacy, and Culture, particularly those with a focus on English Education or children's literature.

924 Foreign and Second Language Teacher Education G 3
Foreign and second language teachers will develop a theoretical framework and study critical issues that impact the life-long development of pre- and in-service teachers.
Wi, Sp Qtr. 1 3-hr. cr. Limited to PhD candidates in Foreign and Second Language Education or by permission.

925 Seminars G 2-5
Prereq: Permission of instructor. Students with permission of advisers may register for more than one section of 925 or for the same section two or more times. Research problems in:

925.10 Elementary Education
925.21 Technology Education
925.23 Mathematics, Science and Technology Education
925.25 English Education
925.26 Mathematics Education
925.27 Science Education
925.28 Social Studies Education
925.45 Foreign and Second Language Education
925.50 Integrated Teaching and Learning
925.52 Visual disabilities
925.55 Hearing disabilities
925.56 Drama, Language Arts, Literature and Reading Education
925.58 Orthopedic Disabilities
925.70 Early Childhood Education
Educational Services & Research
(See Education: Physical Activity & Ed Services; Education: Educational Policy and Leadership; Education: Teaching and Learning)

Educational Studies: Humanities, Science, Technological, and Vocational
(See Education: Physical Activity & Ed Services; Education: Educational Policy and Leadership; Education: Teaching and Learning)

Educational Theory and Practice
(See Education: Physical Activity & Ed Services; Education: Educational Policy and Leadership; Education: Teaching and Learning)

Electrical Engineering
205 Drees Hall Laboratory, 205 Neil Avenue, 292-2572

205 Circuit Analysis U 3
Applications of electrical and computer engineering; circuit fundamentals and analysis; operational amplifiers; phasor analysis; sinusoidal frequency response.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Physics 133, En Graph 167 or Cptr/inf 201 or Cptr/inf 221, prereq or concour: Math 415, minimum CPRHR of 2.00, and acceptance in Elec & Cptr Eng major or Cptr Science & Eng major. Not open to students with credit for 203.

209 Circuits and Electronics Laboratory U 2
Circuits and electronics lab covering basic electronics and principles of electrical measurements, signal conditioning, and instrumentation.
Au, Wi, Sp Qtrs. 1.4 hr lab. Prereq: 204 or 205, Math 415, acceptance in Elec & Cptr Eng major, and prereq or concour: 301. Not open to students with credit for 207 or 308.

261 Introduction to Logic Design U 3
Introduction to combinational switching theory, Boolean algebra, and clocked sequential networks.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Math 152, Physics 132, En Graph 167 or Cptr/inf 221 or Cptr/inf 201, and minimum CPRHR of 2.00.

265 Introduction to Microprocessor-Based Systems U 3
Hardware and software organization of a typical microprocessor; machine language programming; interfacing peripheral devices; and input-output programming; real-time computer applications, self-paced laboratory included.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 281, and En Graph 167 or Cptr/inf 221 or Cptr/inf 201, and prereq or concour: 206, and acceptance in Elec & Cptr Eng major or Cptr Science & Eng major.

281 Introduction to Electrical Engineering Region IV Computing Facilities U 1
This course is intended to teach Elec and Cptr Eng students how to use the Region IV computing and attendant software.
Au, Wi, Sp Qtrs. 1 cl. This course is graded S/U and is not a requirement in the Elec & Cptr Eng curriculum.

293 Individual Studies in Electrical and Computer Engineering U 1-15
Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

300 Electrical Circuits U 3
Introduction to circuit analysis; circuit analysis concepts and their extension to mechanical and thermal systems by analogy; electrical instruments and measurements.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Physics 133 and Math 254 and in Eng college.

301 Analysis and Design in Circuits and Electronics U 3
AC power, frequency response and transient analysis; transfer functions and Bode plots; overview of electronics in terms of signals, analog and digital amplifiers; design.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 205, Math 415, and acceptance in Elec & Cptr Eng major. Not open to students with credit for 204 or 302.
309 Electrical Circuits Laboratory U 1
Accompanies and complements 300 by demonstrating the physical principles discussed there; use of electrical instruments such as oscilloscopes, voltmeters, ammeters, etc., are also emphasized.
Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq or concur: 300.

311 Electromagnetics I U 3
Introduction to static electrical and magnetic fields, current, Ohm's law, resistance, inductance, capacitance, dielectric and magnetic materials.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 204 or 205, Math 415, and acceptance as Elec and Cmptr Eng major.

312 Electromagnetics II U 3
Faraday's law; transformers and rotating machines; Maxwell's equations; plane wave reflections, polarization, lossy media and skin depth; transmission lines including transients, pulses and impedance matching.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 311.

320 Electronic Devices and Controls U 3
Theory and applications of electronic devices; study of control circuits, feedback, operational amplifiers, and instrumentation.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 300 or Mech Eng 482 or equiv, and in Eng College.

323 Electronic Analysis, Design and Simulation U 3
Electronic instrumentation; diode and transistor models for amplifiers and switches; electronics of digital circuits; multiple transistor circuit analysis.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 301 or 321, and acceptance in Elec & Cptr Eng major. Not open to students with credit for 322.

327 Electronic Devices and Circuits Laboratory I U 2
Transistor characteristics, large and small signal parameters, transistor bias and amplifier circuits, operational amplifiers, logic circuits, waveform generation.
Su, Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 308 or 309; Prereq or concur: 322 or 323.

329 Electronic Devices and Control Laboratory U 1
Accompanies and complements 320 by demonstrating the principles discussed there; diodes, transistors, operational amplifiers, etc.
Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq or concur: 320.

331 Introduction to Materials for Electrical Engineering U 3
Introduction to the interrelation of the structure, properties, and processing of materials, with emphasis on electronic properties.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Chem 125, Math 415, Physics 130, a minimum GPA of 2.00, and in Eng college.

341 Energy Conversion U 3
Overview of energy conversion, with emphasis on the operation of AC and DC machines, and various alternative energy conversion processes.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 204 or 205.

351 Systems I U 3
Linear systems and models; time responses using convolution; Fourier series and transform; computer-aided analysis.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 205, or prereq or concur 305.

352 Systems II U 3
Laplace transform; frequency response and Bode plots; Z-transforms; state variables, state equations; computer-aided analysis.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 351, and 301 or 305.

432 Physics of Semiconductor Devices U 3
Principles of semiconductor devices; theory of excess carriers, photodiode effects, and diffusion; application to P-N junction, Schottky barrier, bipolar transistor, and field effect transistors.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 331, and prereq or concur: 321 or 323.

447 Electrical Energy Conversion Laboratory I U 2
Characteristics of transformers, direct current and alternating current electromagnetic energy conversion devices; inspection of power system facilities.
Su, Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 341.

451 Professional Aspects of Electrical and Computer Engineering U 1
History and impact of electrical and computer engineering on society; IEEE code of ethics; professional responsibilities; engineering as social experimentation; safety and risk; case studies; whistle blowing; global awareness.
Au Qtr. 1 cl. This course is graded S/U.

499 Professional Practice in Industry U 2
Preparation of a comprehensive report based on actual employment experience in a co-op job in industry. This course may not be used as a technical elective.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to co-op program in Elec and Cmptr Eng. Prerequisite to a maximum of 6 hrs. This course is graded S/U.

501 Communication Theory U 3
An introductory course in communication theory including both analog and digital modulation concepts and introductory noise concepts.
Au, Wi Qtrs. 3 cl. Prereq: 352; Math 530 or Stat 427. Not open to students with credit for 601.

508 Communication Laboratory U 2
Laboratory in the areas of communication theory and signal processing.
Au, Wi Qtrs. 1 cl, 1 3-hr lab. Prereq or concur: 501. Not open to students with credit for 607.

517 Electromagnetics Laboratory U 2
Transmission line parameters; attenuation, magnitude and phase of voltage and current on lines; reflected waves; waveguide characteristics and techniques; antenna patterns and impedances; optical devices.
Su, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 312.

551 Introduction to Feedback Control Systems U G 3
Feedback systems; modeling; stability; Root Locus Criterion; factor loci; Bode plots; lead/lag, PID controller design, and state feedback.
Au, Sp Qtrs. 3 cl. Prereq or concur: 352.

557 Signals and Systems Laboratory U 2
Laboratory study of signal processing, control systems and their components, computer-controlled instrumentation, sampled data systems, analog and digital control.
Su, Au, Wi Qtrs. 1 cl, 1 3-hr lab. Prereq or concur: 551.

561 Digital Circuit Design U G 3
An introduction to digital circuit design using integrated circuit components; gates, counters, latches, ALU, shift registers, multipliers, memories, etc.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 206, 201, and prerequisite or concurrence: 320 or 321.

567 Microprocessor Laboratory I U 2
Self-paced laboratory in which the concept of a microprocessor is explored by designing and building simple systems, using ROM emulation as the development tool.
Su, Au, Wi, Sp Qtrs. 1 cl, 1 3-hr lab. Prereq: 265 or Cptr/Inf 360 or equiv.

582 Electrical and Computer Engineering Design I U 3
Presents fundamentals of engineering desiging and leads to skills development of a specific design proposal. "Technical communication skills, both written and oral, are employed throughout.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 321 or 323, a second writing course, and standing in Elec and Cmptr Eng. GEC course.

600 Introduction to Digital Signal Processing U G 3
Properties of discrete-time signal processing systems; filter structures; sampling; A/D and D/A conversion; digital filter design; discrete Fourier transform; applications.
Au Qtr. 3 cl. Prereq: 352.

609 Signal Processing Laboratory U G 2
Real-time signal processing using DSP processors; architecture, instruction set, sampling, filtering, and other applications.
Sp Qtr. 1 cl, 1 3-hr lab. Prereq: 600.

613 Antennas and Propagation for Wireless Systems U G 3
Introduction to antennas; antenna design for wireless base stations and remote sites; statistical propagation of waves in urban and rural environments; applications to cellular and PCS.
Au Qtr. 3 cl. Prereq: 312.

614 Introduction to Electromagnetic Compatibility U G 3
Basic knowledge of electromagnetic compatibility (EMC) fundamentals including government EMC regulations, grounding, shielding, and corona test.
Sp Qtr. 3 cl. Prereq: 312 or permission of instructor.

524 Power Electronic Devices and Circuits U G 3
A study of general laws and constraints in power electronic circuits, switching characteristics, generic converter topologies and their operation principles, desirable switching trajectory, snubber circuits.
Au Qtr. 3 cl. Prereq: 321 or 323.

628 Electronic Devices and Circuits Laboratory II U G 2
A laboratory study of converter circuits, switching characteristics of power transistors and thyristors, and effects of circuit elements on the behavior of power converters.
Au Qtr. 1 cl, 1 3-hr lab. Prereq: 327, and prerequisite or concurrence: 624.
637 Solid State Microelectronics Laboratory I U G 4
Introduction to laboratory techniques including oxidation, chemical processes, photolithography, diffusion, and metallization; fabrication and measurement of planar diodes and transistors.
Au Qtr. 2 cl, 1 hr lab. Prereq: 432 or equiv or written permission of instructor.

640 Industrial/Commercial Power Systems U G 3
An introduction to power system design for commercial buildings and industrial plants; legal and economic considerations; equipment specifications and ratings; design practice; fault calculations, protection, and coordination; grounding; and illumination design.
Sp Qtr. 3 cl. Prereq: 340 or 341.

643 Electric Machines U G 3
Magnetic circuits, transformers, electromechanical energy conversion principles, concepts of rotating machines, direct current machines, synchronous machines, and induction machines; steady state and transient behavior.
Au Qtr. 3 cl. Prereq: 341.

644 Noise, Interference, and Safety Issues in Electrical Engineering U G 3
Understanding, modeling, characterization, measurement, and reduction techniques of noise and interference phenomena; personal and equipment safety; instrumentation and regulatory issues.
Au Qtr. 3 cl. Prereq: 311, and 301 or 305. Not open to students with credit for 694G.

647 Microcontroller Systems for Industrial Applications Laboratory U G 2
Microcontroller systems; sensors, electromechanical devices; electric drives and control of electric machines.
Wi Qtr. 1 cl, 1 hr lab. Prereq: 447 or permission of instructor.

650 Introduction to Estimation U G 3
Linear dynamic systems with random inputs, least squares estimation, mean-squared estimation, and Kalman filtering with applications in electrical engineering.
Au Qtr. 3 cl. Prereq: 352, and Math 530 or Stat 427. Not open to students enrolled in, or having credit for 804 or 805.

652 Theory and Design of Digital Computers U G 3
Design of general purpose digital computers including arithmetic and control units, input/output, memory subsystems, interconnection of hardware and software systems, and introduction to microprogramming.
Au, Sp Qtr. 3 cl. Prereq: 265 or CptrInf 360, and 561. Not open to students with credit for 562.

667 Digital Logic Laboratory U G 3
A self-paced laboratory involving the design of basic computer components such as registers, arithmetic logic units, counters, and the design of sequential machines.
Su, Wi, Sp Qtr. 2 cl, 1 hr lab. Prereq: 561.

668 Group Project for Electrical and Computer Engineering Design II U G 3
This design course integrates various areas of electrical and computer engineering into a real design project. Weekly progress reports, design reviews, and a final oral presentation with a written report are required.
Au, Wi, Sp Qtrs. 2 cl, 1 hr lab. Prereq: 582 and sr standing, or permission of instructor. Not open to students with credit for 683.

683 Individual Project for Electrical and Computer Engineering Design I U G 3
This design course integrates various areas of electrical and computer engineering into a real design project. Weekly progress reports, design reviews, and a final oral presentation with a written report are required.
Au, Wi, Sp Qtrs. 2 cl, 1 hr lab. Prereq: 582 or sr standing, and permission of instructor. Not open to students with credit for 682.

693 Individual Studies in Electrical and Computer Engineering U G 1-18
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 or hrs. This course is graded S/U.

694 Group Studies in Electrical Engineering U G 1-18
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 or hrs.

700 Digital Signal Processing U G 3
Vector space methods for signals and systems; least squares design methodologies; design optimization; adaptive filtering; time-frequency techniques.
Wi Qtr. 3 cl. Prereq: 600 or equiv or grad standing.

701 Communication Networks U G 3
Introduction to modern communication networks; data traffic, queuing models, multiaccess channels, and selected applications.
Sp Qtr. 3 cl. Prereq: Math 530 or Stat 427 or equiv or grad standing.

702 Communications Systems U G 3
A study of communications systems with emphasis on signal-to-noise characteristics of various modulation and coding techniques.
Sp Qtr. 3 cl. Prereq: 501 or 601.

706 Medical Imaging U G 3
Introduction to medical imaging techniques, including data collection and image processing for projection X-ray, computed tomography, ultrasonics, and magnetic resonance.
Sp Qtr. 3 cl. Prereq: 352 or permission of instructor.

707 Digital Image Processing U G 3
Fundamentals and research directions in image processing; Fourier transforms, sampling, filtering and restoration, compression, edge detection, and feature extraction.
Wi Qtr. 3 cl. Prereq: 600; Math 530 or Stat 427 or equiv or grad standing.

710 Microwave Circuits U G 4
Theory of microwave passive devices, transformers, couplers, filters, resonators, and circulators; computer-aided design of microwave circuits; microstrip realization and testing with a network analyzer.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: 512 or equiv or grad standing.

711 Radiation from Antennas U G 3
Dipole, loop, aperture, reflector, lens, surface wave, and other antennas; array theory; radiation resistance, efficiency, and input impedance.
Wi Qtr. 3 cl. Prereq: 312 or equiv or grad standing.

713 Elements of Radio Wave Propagation U G 3
Practical methods for predicting tropospheric, groundwave, and ionospheric propagation, including refraction, reflection, and extinction effects.
Sp Qtr (even years). 3 cl. Prereq: 312 or equiv or grad standing.

714 Radar Systems U G 3
Study of radar systems and their applications; emphasis on measurement factors between means of radar with applications to ranging, tracking, mapping, and navigation.
Au Qtr (odd years). 3 cl. Prereq or conc: 613, or grad standing. Not open to students with credit for 704.

716 Optics with Laser Light U G 3
Wave equation, ray optics, optical matrices, near and far-field diffraction theory, diffraction integral with lenses, Fourier optics, optical computing, holography, polarization, birefringence, and applications.
Au, Sp Qtr. 3 cl. Prereq: 352 and 312, or grad standing in engineering, chemistry or physics.

719 Electromagnetic Field Theory U G 3
Fundamental laws of electrodynamics; dielectric, magnetic, and conductive media; energy, force, and momentum; radiation, scattering, and dispersion; interior boundary value problems; and Green's functions.
Au Qtr. 3 cl. Prereq: 312 or equiv or grad standing.

720 Low-Power Mixed-Signal VLSI Design U G 3
Low voltage low power analog design for mixed analog/digital VLSI systems in CMOS technologies, OpAmps and comparators, sample and hold, switched capacitor filters, Nyquist and oversampling converters, decimation filters, applications in baseband wireless communications, integrated sensors.
Wi Qtr. 3 cl. Prereq: 323 or 322 or grad standing.

725 Digital VLSI Design U G 3
Design and circuit analysis of basic VLSI structures such as adders and registers; custom macro-cell, bit slice, and re-use design concepts; physical layout design, layout parasitics extraction, use of VLSI layout design tools.
Sp Qtr. 3 cl. Prereq: 323 or 322 or grad standing.

726 Introduction to Analog Integrated Circuits U G 3
Introduction to bipolar and MOS analog integrated circuit (IC) analysis and design. DC biasing for ICs, current sources, sinks and active loads, bandgap references, input and output stages, OpAmp architectures, nonlinear analog ICs. Computer simulation of Analog ICs.
Au Qtr. 3 cl. Prereq: 323 or 321 or grad standing.

723 Microwave Transistor Amplifiers and Oscillators Laboratory U G 4
Design principles of microwave transistor amplifiers and oscillators; low-noise, power, and broadband amplifiers; and computer-aided design, microstrip realizations, and testing in the laboratory.
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 312, and 323 or 322, or grad standing.
724 Power Electronic Devices and Circuits II U G 3
General model, operational principles, and application of high-frequency switching power converters.
Wi Qtr. 3 cl. Prereq: 341 and 624 or permission of instructor.

730 Fundamentals of Semiconductors for Microelectronics and Optoelectronics U G 3
Crystal structure, semiconductor energy band structure, electron transport and carrier recombination, heterostructures, optical and dielectric properties, optical semiconductor devices.
Au Qtr. 3 cl. Prereq: 432 or equiv.

731 Fiber Optics U G 3
Waveguiding in optical fibers, fiber losses, coupling and power launching, detectors, sources, noise, receiver and transmitter link design, link analysis, introduction to fiber sensors.
Wi Qtr. 3 cl. Prereq: 312, and 323 or 321; or grad standing.

732* Quantum Electron Devices: Lasers U G 4
Atomic interaction with radiation, cavities with gain, pumping techniques, amplifier, and oscillator configurations.
Au Qtr (odd years). 4 cl. Prereq: 432 and 312, or grad standing in engineering, chemistry, or physics.

734* Solid State Electronics Design and Technology I U G 3
Discrete and integrated circuit device design and silicon technologies, VLSI processing procedures, and device measurements for process development.
Sp Qtr (odd years). 3 cl. Prereq: 432 or permission of instructor.

735* Compound Semiconductor Electronics Design and Technology U G 3
III-V compound semiconductor device fabrication technology; epitaxy, doping, bandgap engineering; GaAs and InP high speed devices and IC design approaches; testing and failure mechanisms.
Sp Qtr (even years). 3 cl. Prereq: 432 or permission of instructor.

737 Photonics Laboratory U G 4
Experiments in photonics from among: fiber optics, liquid crystals, quantum devices, optical sensing, acousto-optics, lasers, solar cells, holography, and optical computing. Supplemental lecture.
Sp Qtr. 2 cl. 1 4-hr lab. Prereq: 312, and prereq or concur 432; or grad standing.

740 Electric Power System Analysis U G 3
A study of major components and steady state operation of electric power systems; network concepts, symmetrical components, asynchronous systems, power flow, and system stability.
Au Qtr. 3 cl. Prereq: 341.

741 Electric Power System Protection U G 3
A study of methods and devices used in system protection; protection systems, relay types, pilot wire and carrier systems, relay response, protection of machines, transformers, buses, and lines, instrument transformers; and modern trends in protection.
Wi Qtr. 3 cl. Prereq: 740.

743 Electromechanical Motion Devices U G 3
Electromechanical energy conversion, dynamic models for control of electric machines, design and analysis of electromechanical motion devices.
Wi Qtr. 3 cl. Prereq: 351, and prereq or concur: 341; or permission of instructor.

744 Modern Control of Industrial Electrical Machinery U G 3
Dynamic models of three-phase AC motors and power devices, PWM inverters; AC and DC drives; and vector control, flux weakening control, and scalar control of electric machines.
Sp Qtr. 3 cl. Prereq: 743.

745 Reliability in Electrical and Computer Engineering U G 3
Basic probability and statistics for reliability analysis, basic reliability concepts; combinatorial reliability, Markov processes. Applications to various electrical engineering facilities; analysis of maintenance, outages, failures.
Wi Qtr. 3 cl. Prereq: 341.

747 High Voltage Engineering and Laboratory I U G 4
Dielectric strength and breakdown of gases, liquids, and solids, electrical field design problems in power system equipment; laboratory study of high voltage insulation.
Wi Qtr. 3 cl. 1 2-hr lab. Prereq: 341.

748 Power System Laboratory U G 2
A laboratory study of power system problems from the areas of transformers, machines, and system protection; and visits of electric power plants and high voltage power system facilities.
Sp Qtr. 1 cl. 1 3-hr lab. Prereq: 447, and 643 or 740 or 741.

750 Linear System Theory U G 3
Canonical realization of transfer functions: state observability and controllability; state feedback and asymptotic observers; reduced order observers; direct transfer function design.
Au Qtr. 3 cl. Prereq: 352, and 551 or equiv; or permission of instructor.

752 Feedback Control Systems U G 3
Application of feedback principles to control systems, system equations, performance criteria, compensation, multivariable systems, CAD (Computer Aided Design).
Wi Qtr. 3 cl. Prereq: 551 or equiv.

753 Applications of Control U G 3
Modeling, analysis, and control design for important areas where control theory is applied.
Wi Qtr. 3 cl. Prereq: 551 or equiv or permission of instructor. Repeatable for different titled topics only.

753.01* Powertrain Control
Classical and modern control methods applied to automotive powertrain systems; overview of production hardware; sensors and actuators; modeling for control.
Wi Qtr. (odd years).

753.02* Autonomy in Vehicles
Autonomy in the context of modern vehicles; cruise control, anti-lock brake systems (ABS); steering control/ane keeping; introduction to automated highway systems (AHS).
Wi Qtr (even years).

754 Nonlinear Systems U G 3
Analysis of nonlinear control systems; Lyapunov stability, numerical methods, phase-plane techniques, describing functions, and linearization via feedback.
Sp Qtr. 3 cl. Prereq: 551 or 752, or equiv.

755 Digital Control Systems U G 3
Difference equations, z-transforms, digital filtering, sampling quantization, analog-digital conversion; block diagramming to model digital and hybrid control systems.
Au Qtr. 3 cl. Prereq: 551 or equiv.

757 Control Laboratory I U G 3
Laboratory study of feedback control systems with experiments analyzing different types of plants, transducers, and control techniques; emphasis on real-time computer control.
Wi Qtr. 2 cl. 1 4-hr lab. Prereq: 265 or equiv, and prereq or concur: 755.

758 Control Laboratory II U G 3
Laboratory study of advanced feedback control techniques as applied to nonlinear and multi-output systems under computer or microprocessor control.
Sp Qtr. 1 cl. 1 4-hr lab. Prereq: 757 or permission of instructor.

761 Switching Circuit Theory U G 3
Minimization of multiple output combinational circuits, computer-aided design, state minimization, asynchronous sequential machines, state assignment, transient analysis.
Au Qtr. 3 cl. Prereq: 662 or 562 or Cptr/Inf 675.

762 Theory and Design of Digital Computers II U G 3
Detailed design of major components of modern computer architecture; design of controllers, ALUs, floating point units, caches, and memory management units using a hardware description language.
Wi Qtr. 3 cl. Prereq: 561 or equiv, and 662 or 675 or Cptr/Inf 675.01 or equiv.

763* Introduction to Real-Time Robotics Systems U G 3
Components of a Robot System, types, electronic system components, and analog-digital conversion; error analysis; hardware and software.
Au Qtr (odd years). 3 cl. Prereq: 265 or equiv and 551; or grad standing.

765 Microcomputer Structures U G 3
An investigation of current microcomputer structures with emphasis on hardware implementation of I/O, direct memory access, interrupts, memory, and microprogramming.
Au Qtr. 3 cl. Prereq: 662 or 662.

766 Computer Interfacing and Protocols U G 3
A hardware oriented course dealing with the electrical principles of computer interfaces for digital communication including time domain effects, serial/parallel interfaces, modems, and associated protocols.
Wi Qtr. 3 cl. Prereq: 561, and 662 or 675 or Cptr/Inf 675 or equiv.
789 Microprocessor Laboratory U G 3
Open shop design in which students design, construct, debug, and program microprocessor systems based on currently available microprocessors, memories, I/O devices, etc. using sophisticated microprocessor development systems.
Sp Qtr. 2 cl, 1-3 hr lab. Prereq: 561, 567, and 765 or equiv with permission of instructor.

779 Introduction to Artificial Neural Network Methods U G 3
Wt Qtr. 3 cl. Prereq: 762 or Cprlnf 730 or permission of instructor. Not open to students with credit for Cprlnf 779. Cross-listed in Computer and Information Science.

H783 Undergraduate Honors Program Research U 1-3
Honors program students are offered the opportunity to pursue independent distinction project/research. Student presentations and thesis writing included.
Su, Au, Wi, Sp Ctr. Arr. Prereq: Sr standing in Elec & Cmptr Eng, minimum CPhR of 3.4, and permission of instructor. Repeatable to a maximum of 6 cr hrs.

793 Individual Studies in Electrical and Computer Engineering U G 1-18
Su, Au, Wi, Sp Ctr. Repeatable to a maximum of 18 cr hrs.
This course is graded S/U.

800 Stochastic Digital Signal Processing G 3
Signal processing techniques for stochastic signals. Vector space methods, optimal filtering and prediction, parametric and nonparametric estimation; harmonic retrieval; applications.
Sp Qtr. 3 cl. Prereq: 700 and 805.

802* Digital Speech Processing Systems G 3
The rapid rise of multimedia and cellular communications has led to widespread use of digital voice processing. This course is designed to prepare graduate students for research in this area.
Sp Qtr (odd years). 3 cl. Prereq: 600 and 804.

803* Coding Theory G 3
Error detection and correction codes for communications and data storage, finite fields and polynomial algebra, linear codes, Hamming and Reed-Muller codes, cyclic codes, burst error correction codes, interleaving, Fire codes, and Reed-Solomon codes.
Sp Qtr (even years). 3 cl. Prereq: 804.

804 Random Signal Analysis G 3
Probability, random variables, and random vectors for analysis and research in electrical engineering. Distribution functions and densities, expectation, characteristic functions, functions of random variables, random vectors and sequences, stochastic convergence.
Au Qtr. 3 cl. Prereq: 352 or equiv; Stat 427 or Math 530 or equiv.

805 Random Processes and Applications G 3
Random processes; autocorrelation and cross-correlation functions; energy and power spectral densities; mean-square calculus; minimum mean squared error signal estimators; optimal filtering; random processes as inputs to linear systems; applications to communications and signal processing.
Wt Qtr. 3 cl. Prereq: 804.

806 Signal Detection and Estimation G 3
Binary and M-ary decision theory; Bayes, minimax, ideal, and Neyman-Pearson detectors; maximum likelihood and maximum a posteriori estimation; and receiver operating characteristics.
Sp Qtr. 3 cl. Prereq: 805.

807* Advanced Communication Theory I G 3
Advanced topics in wireless communication systems. Topics are selected to prepare graduate students for research and application to current problems in the field.
Au Qtr (odd years). 3 cl. Prereq: 806.

808* Advanced Communication Theory II G 3
Advanced topics in communication theory. Topics are selected to prepare graduate students for research and application to current problems in the field.
Au Qtr (even years). 3 cl. Prereq: 806.

810 Electromagnetic Field Theory I G 3
Solution of Maxwell's equations in time and frequency domains; field theorems; integral representations; eigenfunction solutions; fields of moving charges.
Wt Qtr. 3 cl. Prereq: 719.

812* Applied High Frequency Methods in Electromagnetics G 3
Introduction of ray and wave optical concepts leading to the uniform geometrical and physical theories of diffraction, Gaussian beam method; application to modem antenna and scattering problems in EM.
Au Qtr (odd years). 3 cl. Prereq: 719 and 810, or equiv.

813* Finite Elements for Electromagnetics G 3
Introduction to finite element, finite difference, and finite volume methods from the viewpoint of electromagnetics.
Sp Qtr (even years). 3 cl. Prereq: 810.

814* Method of Moments in Electromagnetics G 3
Method of Moments solution of integral equations of electromagnetic radiation and scattering; applications to conducting and metallic bodies, apertures, thin wires, microstrip, etc.
Wt Qtr (even years). 3 cl. Prereq: 719.

815* Advanced Antenna Theory G 3
Mutual impedance; moment method, aperture antennas; ground plane effects; horn and reflector antennas; pattern synthesis; antenna measurements.
Sp Qtr (even years). 3 cl. Prereq: 711 and 810.

817* Advanced Electromagnetic Theory I G 3
Foundations of the electrodynamics of continuous media; physical implications of the theory; moving sources, boundaries, and media; scalar Green's functions.
Au Qtr (even years). 3 cl. Prereq: 810 or equiv.

818* Advanced Electromagnetic Theory II G 3
Vector wave functions and dyadic Green's functions; integral equations and their solution by the moment, variational, and T-matrix methods; application to antenna and scattering problems.
Wt Qtr (odd years). 3 cl. Prereq: 817.

819* Advanced Electromagnetic Theory III G 3
Use of asymptotic methods to obtain high-frequency solutions; geometrical optics and the propagation through inhomogeneous media; geometrical theory of diffraction and its application to antennas and scattering problems.
Sp Qtr (odd years). 3 cl. Prereq: 818.

820 Analog VLSI Design G 3
Introduction to analog VLSI design with emphasis on the hardware implementation of analog signal processing VLSI circuits and systems.
Sp Qtr. 3 cl. Prereq: 720 and 721, or permission of instructor.

830* Semiconductor Theory G 3
Direct-reciprocal lattices, lattice waves and phonon theory, electron state and bandstructure theory, electron dynamics, Fermi-Dirac statistics, transport properties and Boltzmann equation (derivations and applications of drift and diffusion equations), and scattering mechanisms.
Wt Qtr (odd years). 3 cl. Prereq: 730 or equiv.

831* Semiconductor Device Theory G 3
Basic semiconductor device current equations, measurement and analysis of interface states, advanced p-n junction theory, avalanche breakdown, metal-semiconductor contacts, MIS capacitors, and short channel devices.
Wt Qtr (even years). 3 cl. Prereq: 730 or equiv.

832* High-Speed Semiconductor Devices G 3
Principles underlying the operation and application of high-speed solid-state active devices, electronic transport in high fields, Gunn-effect, superlattices, heterostructures, and other breakdown-devices.
Sp Qtr (even years). 3 cl. Prereq: 730 or equiv.

833* Optical Effects in Materials and Devices G 3
Static and quasi-staticpiezoelectric, electro-optic photo-refractive, acousto-optic and magneto-optic effects and devices based on these effects.
Au Qtr (even years). 3 cl. Prereq: Grad standing in engineering, chemistry, or physics.

841* Computer Methods in Power System Analysis G 3
A study of computer methods in electric power system analysis; incidence and network matrices, algorithms for formation of network matrices, three-phase network matrices, short circuit studies, iterative solution of simultaneous algebraic and differential equations, and power flow and transient stability studies.
Wi, Sp Ctr (even years). 3 cl. Prereq: 740.

842* Power System Stability and Control G 3
Control and transient stability of power system, excitation system; state estimation; advanced topics.
Wt Qtr (odd years). 3 cl. Prereq: 740 or permission of instructor.
843* High Voltage Transmission Systems  G  3
High voltage transmission systems, electrical characteristics, corona phenomena, radio and television interference, audible noise, corona loss, electromagnetic field effects, insulation design, siting and route selection, and model studies.
Sp Qtr (odd years). 3 cl. Prereq: 740 or 747.

844* Application of Power Electronic Circuits in Electric Power Systems  G  3
Advanced static VAR compensation, system stability enhancement, harmonic minimization, etc., by power electronic means will be discussed.
Sp Qtr (even years). 3 cl. Prereq: 624 and 740, or permission of instructor.

850 Theory and Design of Feedback Control Systems  G  3
Linear feedback theory, stability, the quadratic regulator, output feedback pole placement and design of servocompensators, and CAD techniques for control systems.
Wi Qtr 3 cl. Prereq: 750.

851* Stochastic Estimation and Control Systems  G  3
Synthesis of control systems, both linear and nonlinear, with random inputs; advanced topics.
Wi Qtr (odd years). 3 cl. Prereq: 750 and 650 or 805.

852* Adaptive Control  G  3
Model reference adaptive control, direct and indirect methods, robustness issues, applications.
Wi Qtr (even years). 3 cl. Prereq: 750, 752, and 754.

853* Nonlinear Control with Robotic Applications  G  3
System analysis with emphasis on closed chain dynamics, kinematics, and stability. Design of linear and nonlinear controllers for decoupling states and forces. Applications and examples.
Au Qtr (odd years). 3 cl. Prereq: 754 and 750 or permission of instructor.

854 Optimal Control Theory  G  3
Optimal control by dynamic programming, Pontryagin’s maximum principle and variational methods; minimum time, energy, and fuel problems for linear continuous and discrete systems.
Sp Qtr 3 cl. Prereq: 750 or permission of instructor.

855* Large Scale Systems  G  3
Computational methods in optimal control and large scale dynamical systems; decentralization, hierarchy and their effects on modeling, stability analysis, and optimal controller design and implementation.
Au Qtr (even years). 3 cl. Prereq: 850.

856* Advanced Feedback Control  G  3
Input-output methods, modern frequency domain analysis and design techniques, Youla parameterization, and H2 and H-infinity optimization.
Sp Qtr (even years). 3 cl. Prereq: 752 and 850 or permission of instructor.

858* Intelligent Control  G  3
Introduction to intelligent and autonomous feedback control systems; modeling, analysis, and design techniques; advanced intelligent control techniques.
Sp Qtr (odd years). 3 cl. Prereq: 551, 750, 754 or permission of instructor. Not open to students with credit for 880K taught in Sp Qtr 1991 and 1993.

859* Sliding Mode Control in Electro-Mechanical Systems  G  3
Sliding mode control for decoupling of the design procedure and low sensitivity with respect to uncertainties, and application to control of electromechanical systems.
Au Qtr (odd years). 3 cl. Prereq: 551 or Mech Eng 571. Cross-listed in Mechanical Engineering.

861* Fault Tolerant Design of Digital Systems  G  3
Reliable design of digital systems; fault detection; redundancy techniques; diagnosis of failures; automatic test generation and fault simulation; design for testability; and signature analysis.
Wi Qtr (even years). 3 cl. Prereq or concur: 761.

862* Computational Aspects of Robotics  G  3
Study of computer hardware and programming issues involved in applying the mathematical equations that describe robotic mechanisms equipped with sensory inputs.
Sp Qtr (even years). 3 cl. Prereq: 763.

863 Computer Vision  G  3
Computer vision systems, image models, edge detection, feature extraction, shape representation, motion, structural descriptions, object modeling, matching, knowledge bases, semantic knowledge, architectures, and depth perception.
Sp Qtr 3 cl. Prereq: 707 or permission of instructor.

864* Advanced Computer Design  G  3
Parallel computer architectures, pipeline design, multiprocessor design, interprocessor communication, case studies and application examples.
Wi Qtr (odd years). 3 cl. Prereq: 761 and 762.

865* Advanced Sequential Circuit Theory  G  3
state identification and fault detection, finite automata, memory cellnerness, and information losslessness; linear sequential machines; finite state recognizers.
Sp Qtr (even years). 3 cl. Prereq: 761 or permission of instructor.

866* Multisensor Integration for Intelligent Systems  G  3
Physical sensing devices, multisensor interface, sensor data fusion, object recognition by multisensor integration, and system organization for multisensor integration.
Au Qtr (even years). 3 cl. Prereq: 662 or 562, and 765, Math 530 or Stat 427 or equiv, and Cptr/Inf 660.

870* Biological Systems Modeling  G  3
Consideration of current literature in the area of biological system modeling; cardiovascular, and pulmonary systems; computer implementation of models.
Au Qtr 2 cl, 1 3-hr lab. Prereq: 352 and Physiol 601.

871† Biological System Modeling  G  3
Modeling of such biological systems as renal or thermoregulatory for parameter identification; digital and analog computer laboratory implementation.
Wi Qtr 2 cl, 1 3-hr lab. Prereq: 551 and Physiol 601.

872* Bio-Medical Systems Modeling of Man-Machines  G  3
Systems theory applied to the engineering aspects of the human eye-hand tracking interface comparing computer simulation with experimental data.
Sp Qtr 3 cl. Prereq: 870 or 871.

880 Advanced Studies in Electrical Engineering  G  1-18
Su, Au, Wi, Sp Qtrs. 1-3 cl. Repeatable to a maximum of 18 cr hrs.

881 Seminar in Electrical Engineering  G  1-3
Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

888 Open Graduate Seminar  G  1-3
As an introduction to potential research areas, students will attend OSU sponsored talks relevant to topics in Electrical Engineering and critique them by written reports.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in elec eng. Repeatable to a maximum of 6 cr hrs. The credit earned for this class will not be counted as part of the hour requirement for the Masters degree, nor can it be used as any part of the three areas of emphasis on the PhD Plan of Study. This course is graded S/U.

894 Group Studies in Electrical Engineering  G  1-18
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs.

910* Periodic Structures in Electromagnetics  G  3
Development of the Dyadic Green's function for one and two dimensional periodic structures of arbitrarily oriented elements; application to phased arrays with and without scan compensations.
Sp Qtr (odd years). 3 cl. Prereq: 711, 810, 815, or permission of instructor.

917* Advanced Optical Concepts  G  3
Fiber and integrated optics and their applications, optical transfer functions, aberrations, optical thick holograms, numerical optical computing, and liquid crystals.
Sp Qtr (odd years). Prereq: 716 or permission of instructor.

993 Individual Studies in Electrical Engineering  G  1-18
Su, Au, Wi, Sp Qtrs. Individual conf. Repeatable to a maximum of 18 cr hrs.

999 Research in Electrical Engineering  G  Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Emergency Medicine

005 Upham Hall, 473 W. 12th Avenue Drive, 293-8176

793 Individual Studies in Emergency Medicine  G  1-5
Research on a basic science or clinical issue in Emergency Medicine (under faculty supervision).
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
999 Research in Emergency Medicine G 1-9
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor and grad standing in the M.S. program in Medical Sciences. This course is graded S/U.

Engineering
122 Hitchcock Hall, 2070 Neil Avenue, 292-2651

100 Engineering Survey U 1
Academic requirements: University procedures, grading system, and resources; overview of engineering academic areas of study and services.
Su, Au, Wi, Sp Qtrs. 2 cr. Prereq: Enrollment in ENG. Not open to students with credit for Apr 100, Arts Col 100, Arts & Sci 100, Home Ec 100, Nat Res 100, and UWC 100.

181 Introduction to Engineering I U 3
Visualization and sketches, introduction to spreadsheets and MATLAB, experimental design and data analysis, problem-solving approaches, hands-on lab.
Au, Wi, Sp Qtrs. 2 cr. 3 lab hrs. Prereq: Enrollment in ENG; prerequisite or conc. Math 150 or higher.

182 Introduction to Engineering II U 3
Team building, design-build project, written and oral reports, introduction to CAD, working drawings, preparation of visual aids.
Au, Wi, Sp Qtrs. 2 cr. 3 lab hrs. Prereq: 181; enrollment in ENG.

194 Group Studies in Engineering U 1-18
Special topics of general interest to engineering students.
Su, Au, Wi, Sp Qtrs. 194.01 Engineering Fundamentals and Laboratory IA U 2
Orientation to engineering; engineering graphics and problem-solving; and engineering measurements. One-semester course.
Au Qtr. 2 hr-lab. Prereq. Participation in the Gateway Pilot Program Laboratory experience in calibration and use of measuring devices, accuracy and limitations; basic skills in use of graphics and computers for engineering problem-solving.

194.02 Engineering Fundamentals and Laboratory IB U 2
Orientation to engineering; engineering graphics and problem-solving; and engineering measurements. One-semester course.
Au Qtr. 2 hr-lab. Prereq: 194.01.

194.03 Engineering Fundamentals and Laboratory I U 4
Orientation to engineering; engineering graphics and problem-solving; and engineering measurements. One-semester course.
Au Qtr. 4 hr-cl (lecture and lab). Prereq. Participation in the Gateway Pilot Project and placement in Math 161 or permission of instructor.

194.04 Engineering Fundamentals and Laboratory II U 4
Application of electrical, mechanical, and hydraulic devices; use of computers to model, monitor and control these devices.
Au Qtr. 4 hr-cl and lab. Prereq: 194.03 or equiv. Lab to explore implementation of electric, mechanical, and hydraulic devices; class to teach FORTRAN programming on UNIX workstations.

194.05 Engineering Fundamentals and Laboratory III U 4
Team design project. Students will design, build and test a device to solve a given problem. Team solutions will compete against each other at the end of quarter.
Sp Qtr. 4 hr-cl and lab. Prereq: 194.04.

194.06 Engineering Fundamentals I U 3
Visualization and sketching, problem-solving approaches, experimental design and data analysis, spreadsheets and introduction to CAD and MATLAB. Includes three disciplinary modules, with laboratories.
Au Qtr. 2 cr. 3 lab hrs. Conc. Math 151 or equiv.
This course, one of a sequence of 3 such courses, is designed to expose students to the breadth of engineering through a set of hands-on laboratory experiences in 3 disciplinary-specific modules. In addition, students will develop skills in visualization, sketching, analysis of experimental data, with introductions to CAD and MATLAB.

194.07 Engineering Fundamentals II U 3
Mathematical modeling of systems, 3-D modeling, engineering drawings, computer software, programming in MATLAB. Includes three disciplinary modules, with laboratories.
Wi Qtr. 2 cr. 3 lab hrs. Prereq: 194.06; conc. Math 152 or equiv.
This course, one of a sequence of 3 such courses, is designed to expose students to the breadth of engineering through a set of hands-on laboratory experiences in 3 disciplinary-specific modules. In addition, students will develop mathematical modeling of systems, 3-D modeling, engineering drawings, computer software, programming in MATLAB.

194.08 Engineering Fundamentals III U 3
Mathematical modeling of systems, 3-D modeling, drawing software programming in MATLAB. Includes three disciplinary modules, with laboratories.
Sp Qtr. 2 cr. 3 lab hrs. Prereq: 194.07; conc. Math 153 or equiv.
This course, one of a sequence of 3 such courses, is designed to expose students to the breadth of engineering through a set of hands-on laboratory experiences in 3 disciplinary-specific modules. In addition, students will develop mathematical modeling of systems, 3-D modeling, engineering drawings, computer software, programming in MATLAB.

194.09 Study Skills Development U 1
Student teams with guidance from peer mentors, will work on assignments in any of their courses, and develop study skills.
Au, Wi Qtrs. 2 hr-labs. Conc. Math 148. Students in Math 148 are not eligible to enroll in the Introduction to Engineering courses, but this course gives them an opportunity to begin working with engineering mentors during their first quarter on campus.

194.20 Engineering Mechanics I U 4
Introduction to the fundamental concepts and relationships between classical mechanics and mathematics. Equilibrium, vector analysis, structure analysis and calculus concepts of limits, differentiation and integration.
Au Qtr. 2 hr-lectures, 2 hr-recitations. Prereq. Placement into Math 151 or permission of instructor.

194.21 Engineering Mechanics II U 4
Continuation of 194.20. Discussion of forces, particle dynamics, moments of inertia, and calculus concepts of exponents and logs, multiple integrals, and partial differentiation.
Wi Qtr. 2 hr-lectures, 2 hr-recitations. Prereq: 194.20.

194.22 Introduction to Engineering U 1
Introduction to the fundamentals of electrical and electronic circuits and electrical measurement and control.
Sp Qtr. 2 hr-lectures, 2 hr-recitations. Prereq: 194.25.

195 Women in Engineering U 1
Introduction to the unique problems facing women engineering students and professionals; resources available to deal with those problems.
Wi, Sp Qtrs. 1 cr. This course is graded S/U.

198 Introduction to Engineering U 1
Introduction to the fundamentals of electrical and electronic circuits and electrical measurement and control.
Sp Qtr. 2 hr-lectures, 2 hr-recitations. Prereq: 194.25.

294 Group Studies in Engineering G
Special topics of general interest to engineering students.

294.01 Introduction to Strength, Materials, Manufacturing I U 4
Integration of mechanics, materials and manufacturing as part of the Gateway experimental learning program.
Au Qtr. 3 cr. 3 labs. Prereq: Freshman Gateway Series or EM 220 or equiv.

294.02 Introduction to Strength, Materials, Manufacturing II U 4
Integration of mechanics, materials and manufacturing as part of the Gateway experimental learning program.
Wi Qtr. 3 cr. 3 labs. Prereq: 294.01.

294.03 Introduction to Strength, Materials, Manufacturing III U 4
Integration of mechanics, materials and manufacturing as part of the Gateway experimental learning program.
Sp Qtr. 3 cr. 3 labs. Prereq: 294.02.

H299 Engineering Honors Seminar U 1
Undergraduate Research Scholars will present oral reports and lead discussion on their specific research projects.
Wi Qtr. 1 cr. Prereq. Participation in ENG Honors Program. Repeatable to a maximum of 2 cr hrs. This course is graded S/U.
367 American Attitudes about Technology U 5
Exploration of various perspectives regarding the impact of engineering and technology on American culture.
Au, Wi, Sp Qtrs. 2-2 hr-cl. Prereq: English 110 or 111, and soph standing or above. GEC second writing course.

093 Professional Practice in Engineering U 0
Students complete a cooperative assignment in private industry or for a government agency; assignment is supervised by an employer and monitored and evaluated by the co-op program.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of the Director of the Co-op Program in Engineering. This course is graded S/U.

694 Group Studies in Engineering U G 1-5
Special topics of general interest to engineering students.
Su, Au, Wi, Sp Qtrs.

694.01 Engineering Teamwork Seminar U G 1
Interactive training seminar that teaches communications and interpersonal skills vital to success as an engineer in industry. Sponsored by Tau Beta Pi National Engineering Honor Society.
Au Qtr. Arr. This course is graded S/U.

694.02 Topics in Engineering U 5
Topics in the impact of engineering and technology.
Au Qtr. 2-2 hr-cl. Prereq: English 110 or 111. It is important for engineering professionals to be aware of how the technology they create is received by American society. This course will allow engineering students to explore various perspectives regarding the impact of engineering and technology on American culture.

Engineering Graphics
240 Hitchcock Hall, 2070 Neil Avenue, 292-7323

121 Graphic Presentation U 3
Presentation of three-dimensional subjects by precise graphics: orthographic, sectional, pictorial, and introduction to computer graphics.
Au, Wi, Sp Qtrs. 2-2 hr-cl and lab. VPA Admins Cond course.

122 Graphic Presentation II U 3
Continuation of 121: elements of descriptive geometry, intersections, and development of surfaces, shade, and shadow. Meyers.
Au, Wi, Sp Qtrs. 3-2 hr-cl and lab. Prereq: 121. VPA Admins Cond course.

141 Engineering Graphics I U 3
Methods of problem solving and algorithmic development; introduction to 3-dimensional orthographic and pictorial visualization and presentation.
Meyers.
Wi Qtr. 3-2 hr-cl and lab. Prereq or concur: Math 150 or equiv. VPA Admins Cond course.

141 Engineering Graphics I U 3
Methods of problem solving and algorithmic development; introduction to 3-dimensional orthographic and pictorial visualization and presentation.
Au, Wi, Sp Qtrs. 3-2 hr-cl and lab. Prereq or concur: selection for honors program and Math 150 or equiv.

142 Engineering Graphics II U 3
Graphic problem solving techniques; introduction to computer graphics, display methods; development of dimensioning and graphics skills.
Meyers.
Sp Qtr. 3-2 hr-cl and lab. Prereq: 141. VPA Admins Cond course.

143 Engineering Graphics III U 3
Intermediate interactive computer graphics techniques and graphics conventions; comprehensive engineering problem solving project.
Meyers.
Au Qtrs. 3-2 hr-cl and lab. Prereq: 142.

166 Engineering Graphics and Problem Solving U 4
Introduction to 3-dimensional visualization and presentation with freehand, manual, and CADD methods; introduction to engineering problem solving and reporting.
Meyers.
Su, Au, Wi, Sp Qtrs. 4-2 hr-cl. H166 (honors) may be available to students enrolled in an honors program or by permission of dept. Course incorporates hands-on laboratory experience and is the first in a three course sequence (H166, H167, H168). Permission of instructor, Prereq: Math 150 or better; Status as an engineering major, pre-major, or engineering undecided, or written permission of instructor. Not open to students with credit for 110. VPA Admin Cond Course.

167 Problem Solving through Programming for Engineering Calculations and Computer Graphics U 4
Solving engineering problems using computer programming; development of algorithms and program modules; solutions to major problems will be presented in an engineering report format. Kears.
Su, Au, Wi, Sp Qtrs. 4-2 hr-cl/lab. H167 (honors) may be available to students enrolled in an honors program or by permission of dept. Course incorporates hands-on laboratory experience and is the second in a three course sequence (H166, H167, H168). Prereq for H167: H166 and permission of instructor. Prereq: 156; Prereq or concur: Math 151 or better. Not open to students with credit for 200. VPA Admin Cond Course.

H168 Engineering Fundamentals and Laboratory III U 4
Third of three integrated courses. Design/build team project with documentation, requires integration and application of concepts from previous engineering, math, and physics/mechanics courses. Densel.
Sp Qtr. 3-2 hr-cl/ lab. Prereq: Permission of instructor.

204 Technical Drawing U 3
Various systems of size description including precision dimensioning; fastening systems; and organization and preparation of engineering drawings, perspective, and computer graphics.
Au, Wi, Sp Qtrs. 2-2 hr-cl and lab. Prereq: 121 or written permission of instructor.

294 Group Studies in Engineering Graphics U 1-5
Group studies of specially selected topics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

304 Technical Illustration U 3
Preparation of presentation graphics with emphasis on commercial techniques and design applications.
Wi, Sp Qtrs. 2-2 hr-cl, lab. Prereq: 121.

306 Architectural Drawing for Residential Buildings U 3
Study of terminology and design considerations for residential buildings.
Sp Qtr. 2-2 hr-cl and lab. Prereq: 121 or permission of instructor.

404 Technical Airbrush Illustration U 3
Preparation of airbrush graphics with emphasis on commercial techniques, materials, and presentations.
Au Qtr. 2-2 hr-cl, lab. Prereq: 121.

410 Computer Graphics U 3
An advanced course in graphics with emphasis on the application of computer-generated graphics to the solution of engineering problems. Croft.
Sp Qtr. 3 cl. Prereq: 166.

504 Advanced Technical Illustration U 3
Instruction, problems, materials, and graphic presentation.
Sp Qtr. 2-2 hr-cl and individual consulting by arrangement. Prereq: 304 or 404 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

593 Individual Studies U G 1-5
Opportunity to pursue special-interest topics not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

649 Solid Modeling in Engineering U G 4
Theory and engineering applications of solid modeling in design, analysis, and manufacturing. Duane.
Su, Sp Qtrs. Prereq: 167, Math 254: Aerodynamics 300 or Metallurgy 150 or Permission of Instructor.

694 Group Studies in Engineering Graphics U G 1-5
Special topics in engineering graphics; topics, credit hours, and instructor announced the quarter proceeding the offering.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs.

794 Group Studies U G 1-5
Interdisciplinary topics related to engineering design, graphics, and vision.

Engineering Mechanics
209 Boyd Laboratory, 155 West Woodruff Avenue, 292-2731

H210 Statics U 4
Vector concepts of static equilibrium for isolated and connected body force systems. Analysis techniques of trusses, frames and machines. Construction of shear and moment diagrams.
Sp Qtr. 4 cl. Prereq: Physics 131G; Prereq or concur: Math 254 or equiv. Not open to students with credit for 220 or 293, or equiv.
293 Individual Studies in Introductory Solid Mechanics U 1
Supplemental course for transfer students with credit for statics; topics include the response of deformable bodies subjected to axial, flexural, and torsional loads.
Au, Wi, Sp Qtrs. Arr. Prereq: Credit for 4 hrs of statics. Open only to students seeking transfer credit for 220. Not open to students with credit for 220 or 440. This course is graded R/U.

400 Introduction to Solid Mechanics U 5
Vector concepts of static equilibrium for isolated and connected body systems; introduction to response of deformable bodies subjected to axial, flexural, and torsional loads.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Physics 131, Engrn 167 or equiv, Math 254 (or concour), and minimum CPHR of 2.00 or acceptance in an ENG major, or a CPHR equal to or greater than that of intended major. Not open to students with credit for 210 or 215 or 220.

430 Dynamics U 4
Dynamics of particles and rigid bodies; linear and angular motion; work and energy; and single degree of freedom vibration analysis.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 400 or 220 or equiv. Not open to students with credit for 410 or 415.

440 Strength of Materials U 3
Stress and strain analysis of structural components subjected to unidirectional and combined loadings; pressure vessels, beam deflections, columns.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 400 or 220 or equiv. Not open to students with credit for 215 or 420.

494 Group Studies in Engineering Mechanics U 1-4
Short term project organization, design, construction, marketing and budgeting.
Wi Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 4 or hrs.

602 Advanced Strength of Materials U 4
Mohr's Circle for stress; failure theories; curved beams; bending of non-symmetrical sections; non-circular torsion; beams on elastic foundations; and load-deflection relations by energy methods.
Au Qtr. 4 cl. Prereq: 440 and Math 255 or equivs.

607 Experimental Methods in Mechanics U G 3
Static and dynamic strain analysis by electrical gauges; grid techniques; brittle coatings; analogies; reflective photoelasticity in normal and oblique incidence; motion measurements.
Wi, Sp Qtrs. 2 cl, 2 lab hrs. Prereq: 440 or equiv.

533* Vibrations Laboratory U G 3
Experiments in vibrations of discrete systems, beams, plates, and shells; stress wave propagation.
Sp Qtr. 2 cl, 2 hrs labs. Prereq: 430, and Math 255 or equiv.

634* Introduction to Ultrasonics U G 4
Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics.
Au Qtr. 4 cl. Prereq: 440; Math 255 or 256 or 415. Not open to students with credit for Weld Eng 634. Cross-listed in Welding Engineering.

639 Applied Finite Element Method U G 4
Overview of finite element method, description of finite element software, modeling requirements and techniques, analysis using general purpose software, case studies.
Au Qtr. 2-hr cl, 2-hr recitation. Prereq: 440 or equiv, Eng Graphics 167 or equiv. Cross-listed in Mech Eng.

644 Engineering Fracture Mechanics U G 3
Fracture and fatigue; stress intensity factors; the stability of cracks; compliance and energy role analysis; plate stress, plane strain; crack propagation and arrest.
Wi Qtr. 3 cl. Prereq: 440 and Math 512, or equivs.

662 Introduction to the Mechanics of Composites U G 4
An introduction to the macromechanical analysis of anisotropic composite structures, including governing constituent equations, strength and stiffness advantages, and failure envelopes.
Au Qtr. 4 cl. Prereq: 440 or equiv or permission of instructor. Not open to students with credit for Civil En 662 or Mech En 662. Cross-listed in Civil Engineering and Mechanical Engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. The student must register for a specific study area indicated below, and may register for more than one at a time.
A— Experimental Stress Analysis
B— Dynamics
C— Fluid Mechanics
D— Elasticity
E— Strength of Materials
F— Vibrations
G— Plasticity
H— Plates and Shells
I— Continuum Media
J— Fracture Mechanics
K— Biomechanics
L— Ultrasonics

711 Advanced Engineering Dynamics U G 4
Three-dimensional kinematics and kinetics of particles and rigid bodies; Lagrangian mechanics; Hamiltonian methods; engineering applications.
Sp Qtr. 4 cl. Prereq: 430 and Math 255, or equivs.

712* Energy Principles in Mechanics U G 3
Theoretical development of energy principles in mechanics; strain energy and complementary energy with related material properties; applications to problems in elasticity, dynamics, and vibrations.
Au Qtr. 3 cl. Prereq: 440 and Math 255, or equivs.

731 Vibrations of Discrete Systems U G 4
Free and forced vibrations of mechanical systems having lumped mass and elasticity; multiple degrees of freedom; dissipative systems; random vibrations; engineering applications.
Wi Qtr. 4 cl. Prereq: Math 255 or equivs.

732* Nonlinear Vibration U G 3
Vibrations and undamped systems with nonlinear restoring forces; self-sustained oscillations; application of Hill’s equation of stability of non-linear oscillations.
Sp Qtr. 3 cl. Prereq: 731 and Math 255 or equiv.

734 Vibrations of Continuous Systems U G 3
Equations of motion for strings, membranes, prismatical bars, and plates for various boundary conditions; approximate methods for complicated shapes; wave propagation in elastic media.
Sp Qtrs. 3 cl. Prereq: 430 and Math 255, or equivs.

740 Elasticity U G 4
Classical problems in elasticity; St-Venant torsion and bending theory; plane problems in rectangular and polar coordinates; axisymmetric problems.
Au Qtr. 4 cl. Prereq: 440 or equiv, and prereq or concour: Math 512.

743 Introduction to Continuum Mechanics U G 4
Continuum mechanics in Cartesian coordinates, analysis of deformation and stress, balance principles, constitutive equations; introductory concepts in viscoelasticity and plasticity.
Au Qtr. 4 cl. Prereq: 440 and Math 255, or equivs.

751* Elastic Stability U G 3
Buckling of struts, rings, arches, and plates; trasonic instability; stability criteria, exact and approximate methods.
Au Qtr. 3 cl. Prereq: 440 and Math 255, or equivs.

754* Plates and Shells U G 4
Basic equations; classical solutions and approximate methods in the theory of thin plates; Membrane theory of shells of revolution.
Wi Qtr. 4 cl. Prereq: 440 or equiv, and prereq or concour: Math 512.

762 Structural Composites U G 3
An introduction to the analysis and design synthesis of beams, columns, rods, plates, and panels made of structural composites.
Wi Qtr. 3 cl. Prereq: 662 or Mech En 662 or Civil En 662 or permission of instructor. Not open to students with credit for Civil En 762 or Mech En 762. Cross-listed in Civil Engineering and Mechanical Engineering.

783 Introduction to the Finite Element Method U G 4
Basic concepts, formulation, and application of finite element techniques for numerical solution of problems in structural and continuum mechanics, geotechnical engineering, and water resources engineering.
Wi Qtr. 4 cl. Prereq: Engrn 167 or equiv, and Civil En 406 or Math 568 or equiv. Not open to students with credit for Civil En 783. Cross-listed in Civil Engineering.

7701 Biomechanics U G 3
Discrete mass and continuum mechanics; description of biological materials; biomechanics of limb and gross body movements; various models for injury to head, neck and torso.
Wi Qtr. 3 cl. Prereq: 440 or equiv, and Math 415 or 512, or permission of instructor.
See 694 for topics.
Su, Au, Wi, Sp Qtrs. Prereq: 711, 731, 740, and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

800* Methods of Engineering Analysis G 3
Solution of boundary value, eigenvalue, and initial value problems arising in mechanics by approximate methods; weighted residual and stationary functional methods.
Au Qtr. 3 cl. Prereq: 10 cr hrs of 700-level courses in eng mech and Math 512 or equiv.

833* Elastic Wave Propagation G 3
Dispersion and group velocity; waves in extended media; propagation and reflection in half space; Lamb problem; waves in plates and rods by exact theory scattering of waves.
Au Qtr. 3 cl. Prereq: 731 or 734.

835† Random Vibrations G 3
Description of random processes; statistical properties of the response of mechanical systems; optimization of systems subjected to random inputs; instrumentation.
Au Qtr. 3 cl. Prereq: 731.

839† Finite Element Method in Engineering Science G 5
Approximation of boundary value and initial value problems; variational methods, hybrid and mixed method; convergence and accuracy of finite element approximations; recent developments, advanced applications.
Sp Qtr. 5 cl. Prereq: 763 or Civil En 763, and Math 601 or equiv. Not open to students with credit for Civil En 839. Cross-listed in Civil Engineering.

8401* Theory of Continuous Media G 3
Continuum, compatibility, and strain displacement relationships for a general continuum; constitutive equations for problems of elasticity, fluid dynamics, and inelasticity.
Wi Qtr. 3 cl. Prereq: 740.

843† Advanced Elasticity G 3
Complex variable methods; anisotropic elasticity; three-dimensional elasticity; mixed boundary value problems; variational methods.
Wi Qtr. 3 cl. Prereq: 740.

844† Advanced Fracture Mechanics G 3
Treatment of advanced topics in fracture mechanics; elastic-plastic fracture, dynamic crack propagation and arrest, time dependent fracture, fracture of composites, and fatigue crack growth.
Sp Qtr. 3 cl. Prereq: 644 or permission of instructor.

847† Theory of Plasticity G 3
Plastic range stress-strain relations; elastoplastic behavior of beams and trusses; torsion of prismatic bars; plate strain; shear lines; limit analysis.
Wi Qtr. 3 cl. Prereq: 740 and Math 512.

855† Advanced Shells G 3
Differential geometry of surface; general equations for arbitrary shell; solutions to membrane and bending equations.
Sp Qtr. 3 cl. Prereq: 754.

862† Advanced Mechanics of Structural Composites G 3
An introduction to current important topic areas in structural composites; among these topics are fracture mechanisms and models, energy method modeling, dynamic structural response, and numerical modelling schemes.
Sp Qtr (Even years) 2 1/2 cr hrs. Prereq: 762 or Mech En 762 or Civil En 762 or permission of instructor. Not open to students with credit for Mech Eng 862 or Civil En 862. Cross-listed in Mechanical Engineering and Civil Engineering.

864† Theory of Viscoelasticity G 3
Basic concepts of time dependent inelastic behavior; viscoelastic constitutive laws; correspondence principles; quasi-static and dynamic problems.
Sp Qtr. 3 cl. Prereq: 740.

889 Seminar in Engineering Mechanics G 1
Lectures and discussions covering a range of topics, presented by staff, graduate students, and guest speakers.
Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 6 cr hrs.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. The student must register for a specific study area indicated below, and may register for more than one at a time.
A—Experimental Stress Analysis
B—Dynamics
C—Fluid Mechanics
D—Elasticity
E—Strength of Materials

F—Vibrations
G—Plasticity
H—Plates and Shells
I—Continuum Media
J—Fracture Mechanics
K—Biomechanics
L—Ultrasonics

See 694 for topics.
Su, Au, Wi, Sp Qtrs. Prereq: Evidence of sufficient background in area of study chosen and permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

999 Research in Engineering Mechanics G Arr
Research for thesis or dissertation purposes only.
Su, Wi, Sp Qtrs. This course is graded S/U.

English
421 Denney Hall, 164 West 17th Avenue, 292-6065
(Courses: 020.021.022.023.104.105.106.107.108.01.108.02 have been moved to Education: Teaching and Learning)

109 Intensive Writing and Reading U 5
Su, Au, Wi, Sp Qtrs. Prereq: 5 cr or 2 2-hr cr. Credit may not count toward graduation in some degree programs.

109.01 Intensive Writing and Reading I
First course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: Placement Test score of B. Not open to students with credit for 052, 060, 110W, 110, or 111.

109.02 Intensive Writing and Reading II
Second course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: 109.01. Not open to students with credit for 053, 060, 110W, 110, or 111.

110 First-Year English Composition U 5
Practice in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers. Halasek, Director.
Su, Au, Wi, Sp Qtrs. Prereq: 5 cr or 2 2-hr cr. Credit may not count toward graduation in some degree programs.

110.01 First-Year English Composition I
First course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: Placement Test score of B. Not open to students with credit for 052, 060, 110W, 110, or 111.

110.02 First-Year English Composition II
Second course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: 110.01. Not open to students with credit for 053, 060, 110W, 110, or 111.

110 First-Year English Composition U 5
Practice in the fundamentals of expository writing, as illustrated in the student's own writing and in the essays of professional writers. Halasek, Director.
Su, Au, Wi, Sp Qtrs. Prereq: 5 cr or 2 2-hr cr. Credit may not count toward graduation in some degree programs.

110.01 First-Year English Composition I
First course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: Placement Test score of B. Not open to students with credit for 052, 060, 110W, 110, or 111.

110.02 First-Year English Composition II
Second course in a two-course sequence that provides intensive practice in integrating academic reading and writing.
Prereq: 110.01. Not open to students with credit for 053, 060, 110W, 110, or 111.

H110 Honors First-Year English Composition U 5
Intensive practice in the fundamentals of writing for selected students, as illustrated in the student's own writing and in the essays of professional writers.
Su, Au, Wi, Sp Qtrs. Prereq: 28 or above on the English section of the ACT or 660 on the verbal section of the SAT. Not open to students with credit for English composition courses numbered 110, 110G, 110L, 110W, H110, H111, or H167. GEC first writing course.

L—Taught with an emphasis on literature.
W—Intensive practice in the fundamentals of expository writing.

H167 First-Year Writing Seminar in the Humanities U 5
Intensive critical reading and writing concerning central issues in the humanities.
Au, Wi, Sp Qtrs. Prereq: A score of 4 or 5 on the Advanced Placement Test, which earns EM credit for 110. GEC arts and hums, cultures and ideas course.

129 Individual Studies U 2-5
Su, Au, Wi, Sp Qtrs. Prereq: F standing and permission of Director of First-Year Writing. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

General Prerequisites for Courses Numbered 200 and 300
Unless otherwise indicated, the prerequisites for 200- and 300-level courses is English 110 or 111 or equivalent.
201 Selected Works of British Literature: Medieval through 1800 U 5
An introductory critical study of the works of major British writers from 800 to 1800.
Au, Wi, Sp Qtrs. H201 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq for 201: 110 or 111 or equiv. Prereq for H201: H110 or H111 or equiv or permission of instructor. Required of English majors. GEC arts and hums lit course.

202 Selected Works of British Literature: 1800 to the Present U 5
An introductory critical study of works of major British writers of the 19th and 20th centuries.
Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv. Not open to students with credit for 284 or 285. Required of English majors. GEC arts and hums lit course.

220 Introduction to Shakespeare U 5
Study of selected plays designed to give an understanding of drama as theatrical art and an introduction to fundamental human experience.
Su, Au, Wi, Sp Qtrs. H220 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 110 or 111 or equiv. Prereq for H220: 110 or 111 or equiv, and enrollment in an honors program. GEC arts and hums lit course.

260 Introduction to Poetry U 5
Designed to help students understand and appreciate poetry through intensive study of a representative group of poems.
Su, Au, Wi, Sp Qtrs. H260 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC arts and hums lit course.

261 Introduction to Fiction U 5
Intensive study of a number of short stories and novels to acquaint the general student with some of the important themes and techniques of fiction.
Su, Au, Wi, Sp Qtrs. H261 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC arts and hums lit course.

263 Introduction to Film U 5
Introduction to methods of reading film texts by analyzing cinema as technique, as system, and as cultural project. 1-3 hr. cl., 2-2 hr. cl. Prereq: 110 or 111 or equiv. GEC arts and hums VPA course.

265 Writing of Fiction I U 5
Practice in the writing of fiction; analysis and discussion of student work, with some attention to general methods of fiction and the publishing situation.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 or hrs.

266 Writing of Poetry I U 5
Practice in the writing of poetry; emphasis on the students' own work, with reference to established poetic patterns and established poetry.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 or hrs.

268 Writing of Creative Nonfiction I U 5
Practice in the writing of creative nonfiction; analysis and discussion of student work, with reference to the general methods and scope of the genre.
Su, Au, Wi, Sp Qtrs. Workshop-seminar. 2-2 hr. cl. Prereq: English 110 or 111 or equiv. Repeatable to a maximum of 10 or hrs.

270 Introduction to Folklore U 5
A general study of the field of folklore including basic approaches and a survey of primary folk materials: folktales, legends, folktongos, ballads, and folk beliefs.
Su, Au, Wi, Sp Qtrs. GEC arts and hums cultures and ideas course.

271 Introduction to English Language Study U 5
An introduction to the grammar, history, and social and regional dialects of the English language.
Au, Wi, Sp Qtrs. Not open to students with credit for 570, 669, 671, 672; or Linguid 201 or 601. GEC arts and hums cultures and ideas course.

275 Thematic Approaches to Literature U 5
An introduction to literature through the examination of a major theme as treated in different genres and periods; topic varies quarterly. Wi Qtr. GEC arts and hums lit course.

280 The English Bible U 5
The Bible in English translation, with special attention to its literary qualities, conceptual content, and development within history.
Au, Wi, Sp Qtrs. H280 (honors) may be available to students enrolled in a honors program or by permission of dept. GEC arts and hums lit course.

281 Introduction to African-American Literature U 5
A study of representative literary works by African-American writers from 1760 to the present.
Wi Qtr. Offered in cooperation with African-American and African Studies. GEC arts and hums lit and social diversity course.

290 Colonial and U.S. Literature to 1865 U 5
Introductory study of significant works of U.S. literature from its Colonial origins to 1865.
Su, Au, Wi, Sp Qtrs. GEC arts and hums lit course.

291 U.S. Literature: 1865 to Present U 5
Introductory study of significant works of U.S. literature from 1865 to the present.
Su, Au, Wi, Sp Qtrs. Prereq: 110 or 111 or equiv. Not open to students with credit for 290 before Wi Qtr 1993. GEC course.

294 Group Studies U 3-5
Topic varies from quarter to quarter on subjects not otherwise covered by English courses. Repeatable to a maximum of 30 or hrs.

H296 Honors Seminar: Literature and Intellectual Movements U 5
Studies in the relationship of works of literature to their general intellectual contexts, involving such topics as Deism, Marxism, Primitivism, Freudian psychology; topic varies quarterly.
Wi Qtr. Prereq: CPHFR of 3.00 or better, with 3.50 or better in English, and permission of dept.

303 Research and Term Paper Writing U 5
Emphasis in researching, analyzing, and documenting secondary material for the formal essay and term paper; assignments incorporate research principles with informative, persuasive, and argumentative writing.
Sp Qtr. 5 cl. Prereq: 110 or 111 or equiv with permission of course director, and jr or sr standing.

304 Business and Professional Writing U 3
The study of principles and the practice of techniques associated with business and professional writing; emphasis on the style, organization, and conventions appropriate to business letters and reports.
Au, Wi, Sp Qtrs. GEC second writing and social diversity course.

307 Intermediate Essay Writing U 5
Prereq: 110 or 111 or equiv, and soph standing. Only one subdivision may be taken for credit. Not open to students with credit for 210, 267, H267, 301, 302, 303, 304, 305, or 387. GEC courses.

307.01 The American Experience
An intermediate course that extends and refines expository writing and analytic reading skills, with an emphasis on style and an introduction to documentation, with major topics pertaining to the United States.
Su, Au, Wi, Sp Qtrs. GEC second writing and social diversity course.

307.02 The U.S. Experience as Reflected in Literature
Discussion, analysis, and writing about issues presented through the diverse voices of U.S. literature.
GEC second writing and social diversity course.

307.03 African-American Voices in U.S. Literature
Discussion, analysis, and writing about issues presented through the diverse voices of African-American literature.
Not open to students with credit for AMAmS AS: 307.03. Cross-listed in African-American and African Studies. GEC second writing and social diversity course.

307.04 English in the United States
Discussion, analysis, and writing about issues related to the use of English in the United States.
GEC second writing course.

307.05 The U.S. Folk Experience
Discussion, analysis, and writing about U.S. folk culture with a concentration on individual life stories.
GEC second writing and social diversity course.

307.06 Composing U.S. Communities
Discussion, analysis, and writing about how rhetorical discourse helps to define, sustain, and challenge American society.
GEC second writing course.

307.07 Issues of Diversity in U.S. Workplace Communication
Discussion, analysis and writing about issues of diversity as they affect communication in U.S. workplaces.
GEC second writing course.
H367 Honors Intermediate Essay Writing U 5
Only one decimal subdivision may be taken for credit. Not open to students with credit for 210, 267, H367, 301, 302, 303, 304, or 305.

H367.01 The American Experience
Intensive course that extends and refines expository writing and analytic reading skills, with emphasis on the period from 1776 to 1865. Students will contribute to the composition of a collective text, and may choose to focus on a single country or region. Not open to students with credit for 267, H367, or 301.

373 American and English Literature and Film U 5
The interrelationship between literary and cinematic art. WI Qtr. Not open to students with credit for 273. GEC arts and humanities courses and ideas course.

397 Informative Writing U 5
Intensive advanced training in the art of informative writing. Su, Au, Wi, Sp Qtrs. Prereq: 301 or 110 or equiv, a 367 writing course, and Jr or Sr standing. Not open to students with credit for 301.

398 Critical Writing U 5
Analysis of poetry, fiction, and drama, and issues in literary studies; intensive practice in writing critical essays in preparation for upper-division courses. Su, Au, Wi, Sp Qtrs. Prereq: 110 or 302 or equiv, a 367 writing course, and a declared English major. Not open to students with credit for 302 require English majors; enrollment limited to English majors except by permit of the instructor. GEC third writing course.

H398 Honors Critical Writing U 5
Intensive practice in writing various kinds of analyses of literary texts. Au, Sp Qtrs. Prereq: 110 or 111, a second writing course, English majors, or permission of instructor. GEC third writing course. General Prerequisites for Courses Numbered 400 or above:

405 Introduction to Technical Writing and Editing U 5
Introduction to technical writing for humanities students. Wi Qtr. 2 hr cr. Prereq: A 367 second writing course.

467 Writing and Learning U 5
Study of how writing skills develop, in the context of a peer consulting program, including 2 weekly classes and a 2-hour tutorial practicum. Au, Wi, Qtr. 2.5 to 3 hr cr, arr. practicum. Prereq: 110 or 111 or equiv.

500-level courses may provide graduate credit only in depts other than English.

Ordinarily all 500- and 500-level courses are offered at least once a year, but quarters of offering vary. Check the English listing in the quarterly Master Schedule of Classes Bulletin.

501 Expository Writing for Graduate Students G 5
Intensive review of techniques of expository writing, with emphasis on writing research papers. O'Hare, Director.

502 Shakespeare U G 5
A critical consideration of the art, personality, and achievement of Shakespeare in the light of Renaissance and modern significance.

521 The English Renaissance U G 5
A study of Tudor prose and poetry as they exemplify literary art and as they reflect the creative and inquiring temper of the age. Not open to students with credit for 267.

522 Early 17th-Century Literature U G 5
A study of the poetry and prose of 1600-1660, including the major works of Milton.

531 Restoration and Early 18th-Century Literature U G 5
A study of poetry, prose, and drama from Dryden and the Restoration playwrights to the works of Swift and Pope.

535 Literature of the 19th Century U G 5
A study of the ideas and artistry of the major figures of the 19th century: Swift, Pope, Fielding, Sterne, Boswell, and Johnson.

540 Romantic Poetry and Poetics U G 5
Study of Romantic poetry and poetics: readings in Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and Mary Shelley.

541 Victorian Poetry and Poetics U G 5
Study of Victorian poetry and poetics: readings in Tennyson, the Brontës, Arnold, the Rossetti's, Swinburne, Hopkins, and Hardy.

542 19th-Century English Novel U G 5
Readings in a group of major novelists, such as Austen, Dickens, and Thackeray, with special emphasis upon social and humanistic values. Not open to students with credit for 641.

543 20th-Century British Fiction U G 5
A study of the development of British fiction after 1800, with emphasis on such major novelists as Conrad, Joyce, Lawrence, and Woolf. Not open to students with credit for 643.

547 20th-Century Poetry U G 5
A study of 20th-century American and British poetry, with emphasis on such major figures as Frost, Yeats, Stevens, Eliot, Williams, and Auden.

549 Modern Drama U G 5
An historical and critical examination of the major developments, personalities, and achievements in the drama of Europe and America since the advent of Ibsen. Not open to students with credit for 640.

550 Colonial and U.S. Literature to 1830 U G 5
Introduction to selected works of early U.S. and Colonial literature including such writers as Anne Bradstreet, Phillis Wheatley, Benjamin Franklin, Washington Irving, James Fenimore Cooper.

551 American Renaissance in Literature U G 5
An introduction to the major American writers of the mid-19th century: Poe, Hawthorne, Melville, Emerson, Thoreau, and Whitman.

552 American Literature, 1865-1914 U G 5
Studies in fiction and poetry emphasizing such major figures as Twain, Howells, James, Dickinson, Robinson, Crane, Dreiser, and Willa Cather.

553 20th-Century American Fiction U G 5
A study of American fiction after 1914, with emphasis on the works of such major figures as Anderson, Fitzgerald, Hemingway, and Faulkner.

560 Studies in English and American Poetry U G 5
Topic varies: examples: the dramatic monologue, epic and mock epic, the religious lyric, narrative poetry. Repeatable to a maximum of 10 cr hrs.

561 Studies in English and American Fiction U G 5
Topic varies: examples: tragedy and irony in the novel; the novel of initiation; the novel and the city; the modern short story. Repeatable to a maximum of 10 cr hrs.

562 Studies in English and America Drama U G 5
Topic varies: examples: the revenge play; Restoration and 18th-century drama; tragedy; the play within the play. Repeatable to a maximum of 10 cr hrs.

563 Studies in Contemporary Literature U G 5
A study of prose and poetry written since approximately 1945.

564 Studies in a Major Author U G 5
Topic varies: examples: Austen; Faulkner, Joyce; Pope. Repeatable to a maximum of 10 cr hrs.

565 Writing of Fiction II U 5
Practice in the writing of fiction; continuation of 265 at an advanced level. Au, Wi, Sp Qtrs. Prereq: 265 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs, including hrs earned in 665.

566 Writing of Poetry II U 5
Practice in the writing of poetry; continuation of 266 at an advanced level. Au, Wi, Sp Qtrs. Prereq: 266 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs, including hrs earned in 666.
567 Rhetoric and Community Service: A Writing Seminar U 5
The study of issues relating to rhetoric, community service, and intercultural communication while serving as volunteers and as writers for a local community service agency.
Au, Wi, Sp Qtrs. 2 2-2 hr cl, 2 hrs on site. Prereq: 110 and one of the 367 decimals. Repeatable to a maximum of 10 cr hrs.

568 The Writing of Creative Nonfiction II U 5
Practice in the writing of essays and book-length creative nonfiction.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs, including hrs earned in 664.

570 Introduction to the History of English U 5
A study of the historical development of English giving attention to social factors associated with language changes in the phonology, morphology, syntax, lexicon, and discourse structure.
Sp Qtr. Prereq: 10 or cr hrs of English at 200 or 300 level or equiv, or permission of instructor. Not open to students with credit for 274.

571 Studies in the English Language U 5
Topic varies: examples: American English; the sociology of American dialects; language and style.
Repeatable to a maximum of 10 cr hrs.

572 Traditional Grammar and Usage U 5
An examination of terminology and structures traditionally associated with the study of English grammar and of usage rules, especially problematic ones, governing edited written American English.

573 Rhetorical Theory and the Analysis of Discourse U 5
A study of contemporary rhetorical theories to show how a range of literary and non-literary texts persuades readers to assert or act.

574 History and Theories of Writing U 5
Study of the origins, definitions, and development of writing, with varying perspectives on historical, technological, theoretical, and ideological issues.

575 Studies in Literary Forms and Themes U 5
Topic varies: examples: ironic forms; the Trojan War in English literature; the hero and the anti-hero; pastoralism and romance.
Repeatable to a maximum of 10 cr hrs.

576 Studies in Critical Theory U 5
Study of selected issues or movements in critical theory; topics vary; for example, intention, structuralism and literature, new criticism and the contemporary scene, language and literature.
Repeatable to a maximum of 10 cr hrs.

577 Studies in Folklore U 5
Topic varies: examples: children's folklore; folklore theory; Appalachian folklore; folk song; native American folklore; folk narrative; folklore and popular culture.
Repeatable to a maximum of 10 cr hrs.

578 Studies in Film U 5
Examination of particular topics, themes, genres, or movements in cinema or in the relationship between cinema and literary texts.
Sp Qtr. 1 3-hr, 1 2-hr cl. Prereq: 110, 111, or equiv, and 10 hrs of course work in the 200 or 300 level, or permission of instructor. Repeatable to a maximum of 10 cr hrs.

579 Studies in Nonfiction U 5
Critical analysis of nonfiction written discourse with varied topics, i.e., Victorian prose, American nature writing, business and professional writing, biography and autobiography.
Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

580 Studies in Gay and Lesbian Language and Literature U 5
Issues in the representation of gay and lesbian desires, identities, and cultures, through the study of literature, film, folkways, or language.
Au Qtr. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs.

582 Studies in African-American Literature U 5
Topic varies: examples: Neo-slave narratives; the Harlem Renaissance; literature by African-American women.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in 543 or 541 S82. Cross-listed in African-American and American Studies.

H590 Honors Seminar: Major Periods in Literary History U 5
Intensive study of one of the major periods of English and American literature; periods vary quarterly.
Prereq: CPHR 3.00 or better, with a 3.50 or better in English, and permission of dept.

H590.01 The Middle Ages
H590.02 The Renaissance
H590.03 Neo-Classicism
H590.04 Romanticism
H590.05 The Later 19th Century
H590.06 The Modern Period
H590.07 Literature in English after 1945
Intensive study of literature written in English after World War II, examining influential intellectual and literary movements and theories of the time.
Sp Qtr. 2 2-hr cl.

592 Women in Literature U 5
Close examination from feminist perspectives of literature by or about women; central topic varies, for example, biography or autobiography, women as artists, images, and stereotypes.
Offered in cooperation with Women's Studies.

597 Issues of the Contemporary World U 5
Prereq: Sr standing. GEC contemporary world course.

H597.03 Interdisciplinary Perspectives on Current Issues
Team-taught interdisciplinary and cross-cultural course on the relationships among politics, ethics, rhetoric, and law as they confront current practical issues.
Sp Qtr. 2 2-hr cl. Not open to students with credit for Philos 597.03 or Poli Sci 597.03. Cross-listed in Philosophy and Political Science.

H598 Honors Seminar: Selected Topics in Literature and Literary Interpretation U 5
Selected problems (themes, movements, genres, and styles) emphasizing continuity and development in English and American literary and linguistic history; topic varies quarterly.
Wi, Sp Qtrs. Prereq: CPHR of 3.00 or better with a 3.50 or better in English, and permission of dept. Repeatable to a maximum of 10 cr hrs.

600-level courses may provide graduate credit in all depts.

662 Literary Publishing U 5
Theory and practice of editing and publishing literature.
Au Qtr. Prereq: 265 or 266. 5 cr hrs of 500-level literature courses in English, and permission of instructor.

676 History of Literary Criticism U 5
Intensive study of the basic texts in literary criticism from Plato to T. S. Eliot.

692 Workshop U 1-8
Arr. Repeatable to a maximum of 12 cr hrs.
W—This alphabetical subdivision is graded S/U.

693 Individual Studies U 1-5
Students may register for individual directed study under this number for work not normally offered in courses.
Prereq: Sr standing and permission of instructor and of dept undergraduate or grad committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies U 1-5
Repeatable to a maximum of 15 cr hrs.

696 Research in English: Comprehensive Examinations G Arr
Research in preparation for MA comprehensive exams.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of grad studies director. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

697 Study at a Foreign Institution U 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

General Prerequisites for Courses Numbered 700
Unless otherwise indicated, the prerequisites for 700-level courses are 15 credit hours of English courses at the 300 or 500 level or the equivalent work in allied departments or permission of the instructor.

700 Introduction to Graduate Study in English U 5
Introduction to bibliography, research methods, critical theory, and the principles of literary criticism for advanced work in English studies.
Prereq: Permission of director of graduate studies. Not open to students with credit for 600. Required of all MA candidates.

710 Introduction to Old English Language and Literature U 5
The reading of Old English prose with special attention to the language and to cultural background.

712 Introduction to Middle English Language U 5
An intensive study of Middle English phonology, morphology, syntax, and dialectology from 1100-1500, with selected readings in the literature.
716 Introduction to Graduate Study in the Middle Ages U G 5
Introduction to advanced study and current scholarship and criticism in medieval literature, 1300-1500.
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

718 Introduction to Graduate Study in Chaucer U G 5
Introduction to advanced study in Chaucer, with a focus on The Canterbury Tales and Troilus and Crises.  
Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

720 Introduction to Graduate Study in Renaissance Drama U G 5
Introduction to advanced study and current scholarship and criticism in drama by Shakespeare and his contemporaries.  
Wi, Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

727 Introduction to Graduate Study in Literature of the 16th Century U G 5
Introduction to advanced study and current scholarship and criticism in 16th century English literature.  
Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

728 Introduction to Graduate Study in English Literature of the 17th Century U G 5
Introduction to advanced study and current scholarship and criticism in 17th century English literature.  
Au Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

736 Introduction to Graduate Study in the Restoration and 18th Century U G 5
Introduction to advanced study and current scholarship and criticism in English literature, 1660-1800.  
Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

737 Introduction to Graduate Study in 18th Century English Fiction U G 5
Introduction to advanced study and current scholarship and criticism in 18th century English fiction.  
Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

746 Introduction to Graduate Study in British Literature of the Romantic Period U G 5
Introduction to advanced study and current scholarship and criticism in British literature of the Romantic period.  
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

747 Introduction to Graduate Study in British Literature of the Victorian Period U G 5
Introduction to advanced study and current scholarship and criticism in British Victorian literature.  
Wi Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

755 Introduction to Graduate Study in American Literature, Origins to 1840 U G 5
Introduction to advanced study and current scholarship and criticism in early American literature.  
Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

756 Introduction to Graduate Study in American Literature, 1840-1914 U G 5
Introduction to advanced study and current scholarship and criticism in American literature, 1840-1914.  
Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

757 Introduction to Graduate Studies in African-American Literature G 5

757.01 Introduction to Graduate Studies in African-American Literature, 1746-1900
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1746 to 1900.  
Au Qtr. 2 2-hr cl. Not open to students with credit for AfrAm&AS 757.01. Cross-listed in African-American and African studies.

757.02 Introduction to Graduate Studies in African-American Literature, 1900 to Present
A survey of creative texts and critical interpretations representing and reflecting black culture and literary expression in the United States from 1900 to the present.  
Wi Qtr. 2 2-hr cl. Not open to students with credit for AfrAm&AS 757.02. Cross-listed in African-American and African Studies.

762 Introduction to Graduate Study in Drama U G 5
Introduction to advanced study in the theory, history, and practice of drama.  
Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.

763 Graduate Workshop in Poetry U G 5
A graduate-level workshop in the writing of poetry.  
Su, Au, Wi, Sp Qtr. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 or hrs.

765 Graduate Workshop in Fiction U G 5
A graduate-level workshop in the writing of fiction.  
Su, Au, Wi, Sp Qtr. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 or hrs. Designed for advanced undergrads and grad students.

766 Introduction to Graduate Study in 20th Century Literature, 1900-1945 U G 5
Introduction to advanced study and current scholarship and criticism in literature written in English 1900-1945.  
Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

767 Introduction to Graduate Study in 20th Century Literature, 1945-Present U G 5
Introduction to advanced study in 20th century literature written in English since 1945.  
Au Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergraduates may be admitted with permission of instructor.

768 Graduate Workshop in Creative Nonfiction U G 5
A graduate-level workshop in the writing of creative nonfiction.  
Su, Au, Wi, Sp Qtr. Prereq: MFA standing or permission of instructor. Repeatable to a maximum of 20 or hrs, including hrs earned in 764.

770 Introduction to Graduate Study in Folklore G 5
A two-course sequence in current scholarship and methods necessary for advanced study in folklore.  
Sp Qtr. 2 2-hr cl. Cross-listed in Comparative Studies in the Humanities.

770.01 Approaches and Research Methods
Bibliography, research, and critical approaches for the advanced study of folklore.  
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Not open to students with credit for Comp Std 770.01.

770.02 Field Research
Methods and theory of field research and field ethics necessary for advanced study in folklore.  
Prereq: Grad standing or permission of instructor. 770.01 or Comp Std 770.01 recommended. Not open to students with credit for Comp Std 770.02.

771 Introduction to the English Language U G 5
Introduction to the structure and variation in the English language, with emphasis on both oral and written English.

772 English Syntax U G 5
A study of various systems of English grammar, with emphasis on their application to writing and teaching.  
Prereq: 271 or 771, or Linguisit 201 or 601.

773 Applied English Phonology U G 5
A study of English phonology and its application to a variety of literary and non-literary resources.  
Prereq: 271, or Linguisit 201 or 601.

774 History of the English Language U G 5
The historical development of English and its place among the world's languages; emphasis on inner history and outer matrix.
776 Graduate Study in the History of Literary Criticism G 5
A two-course sequence in literary criticism from Plato to contemporary theory.
Sp Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Not open to students with credit for 676.
776.01 From Plato to Aestheticism
Major texts and issues in criticism from the classical Greeks to Wilde.
776.02 From 1900 to the Contemporary Period
Major texts and issues from 1900 to the present.
777 American English U G 5
Introduction to various aspects of the English language as it is used, and has been used in the continental United States.
Prereq: 271 or 771 or equiv or permission of instructor.
778 Introduction to Graduate Study in Film and Film Theory G 5
An introduction to the methodologies, contexts, and development of film and film theory.
Au Qtr. 1 2-hr cl, 1 3-hr cl. Prereq: Grad standing in English or permission of instructor.
779 Introduction to Graduate Study in Rhetoric U G 5
A two-course sequence in history and theory which provides a foundation for advanced study in rhetoric.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor. Advanced undergrads may be admitted with permission of instructor.
779.01 Classical to Early Renaissance
History and theory of rhetoric from Classical Greece to early modern Europe.
779.02 Renaissance to 20th Century
History and theory of rhetoric from the Renaissance to the present.
Prereq: Grad standing in English or permission of instructor; 779.01 recommended.
780 Current Theory and Practice in the Teaching of Writing U G 5
Modern theories of composition; topics include: invention, style, sentence combining, evaluation, the composing process.
Prereq: Grad standing or permission of instructor.
781 Introduction to the Teaching of First-Year English G 5
Introduction to the theory and practice of teaching first-year English. 2.2-hr cl. Not open to students with credit for 881.01. Required of new GTAs in English.
783 Honors Research U 3-5
A program of reading arranged for each student, with individual conferences, reports, and honors thesis.
Prereq: 4th yr standing; a grade of A in at least half of the English courses taken and an average of B in the remainder; permission of professor under whose supervision the work is to be completed. Open only to candidates for distinction in English who have in their jr yr completed with high grades a program approved by the undergraduate committee. Repeatable to a maximum of 10 cr. This course is graded S/U.
790 Foundations of Contemporary Critical Theory U G 5
Interdisciplinary survey of the theoretical bases of major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.
Prereq: Grad standing or permission of instructor. Advanced undergrads may be admitted with permission of instructor. Cross-listed in Comparative Studies in the Humanities, French, German, Italian, and Spanish.
792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 hr with permission of dept.
795 Introduction to Research Methods in Rhetoric and Composition G 5
Introduction to the quantitative and qualitative research methods most widely used in rhetorical and composition studies.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing in English or permission of instructor.
799 Graduate Studies in Literary Bibliography G 5
An introduction to the materials and methods of literary bibliography for graduate students in literary studies.
Sp Qtr. 2 2-hr cl. Prereq: Grad standing.
General Prerequisites for Courses Numbered 800
30 hrs of courses in English, or 20 hrs in English and 25 hrs in specified allied disciplines. Topics may not be taken which were formerly taken as courses under a different number. Admission to 800-level courses is by permission of a Department of English graduate adviser only.
803 Techniques of Literary Discussion G 2 or 3
Practical and theoretical aspects of leading and participating in discussion of literary texts.
This course is graded S/U.
817 Seminar in Early Medieval English Literature G 5
Topics include: Beowulf and its background; Old English poetry exclusive of Beowulf.
Prereq: 710 or equiv. Repeatable to a maximum of 10 cr hrs.
818 Seminar in Later Medieval English Literature G 5
Topics include: Poetry of the alliterative revival; medieval English drama; 15th-century non-dramatic literature.
Repeatable to a maximum of 20 cr hrs.
820 Seminar in Shakespeare G 5
An intensive consideration of selected problems in the scholarly study of Shakespeare.
Repeatable to a maximum of 10 cr hrs.
827 Seminar in English Renaissance Literature G 5
Topics include: Renaissance and early 17th-century poetry; Spenser; Renaissance drama; Milton; Renaissance prose.
Repeatable to a maximum of 20 cr hrs.
837 Seminar in Restoration and 18th-Century Literature G 5
Topics: 18th-century novel; Restoration and 18th-century drama; 18th-century literature and culture.
Repeatable to a maximum of 25 cr hrs.
840 Seminar in English Romantic Literature G 5
Literary romanticism in relation to contemporary intellectual and political movements; topic varies from year to year.
Repeatable to a maximum of 15 cr hrs.
844 Seminar in Victorian Literature G 5
Topics include: Victorian poetry; 19th-century non-fictional prose; 19th-century novel.
Repeatable to a maximum of 15 cr hrs.
850 Seminar in 19th-Century American Literature G 5
Topics include: American literature 1865-1914; individual American writers, 1800-1900; the American Renaissance.
Repeatable to a maximum of 20 cr hrs.
851 Seminar in Critical Approaches to Black Literatures G 5
A close reading of major literary critical discourses that have shaped and determined the course of black literary production in Africa, North America, and the Caribbean.
Sp Qtr. 2 2-hr cl. Prereq: Grad standing and an introductory course in African-American/African literature, or permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in AmSt&AS 851. Cross-listed in African-American and African Studies.
854 Seminar in 20th-Century American Literature G 5
Topics include: 20th-century American fiction; individual 20th-century American writers; 20th-century poetry; 20th-century drama.
Repeatable to a maximum of 20 cr hrs.
863 Seminar in 20th-Century British Literature G 5
Topics include: 20th-century British fiction; individual 20th-century British writers; modern drama; 20th-century British poetry.
Repeatable to a maximum of 20 cr hrs.
864 Postcolonial/Transnational Literatures G 5
Topics include postcolonial and transnational literature in English; theories of colonial, postcolonial, and transnational literature and culture.
Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.
870 Seminar in Folklore G 5
Intensive study of some particular aspect of folklore.
Prereq: 770 or equiv with written permission of instructor. Repeatable to a maximum of 10 cr hrs.
871 Seminar in the Forms of Literature G 5
Problems in the criticism of fiction, poetry, or drama.
Repeatable to a maximum of 20 cr hrs.
872 Seminar in the English Language G 5
Advanced English language study; topics vary.
Prereq: 771 or Linguist 801 or equiv with permission of instructor.
Repeatable to a maximum of 10 cr hrs.
876 Seminar in Critical Theory G 5
A review of theory and practice in some of the principal forms of literary analysis; focus on a single theoretical movement or a single critical problem. Repeatable to a maximum of 10 cr. hrs.

879 Seminar in Rhetoric G 5
Rhetoric of a particular period; major figures in rhetoric, rhetorical analysis of literature. Repeatable to a maximum of 10 cr. hrs.

880 Seminar in Composition G 5
Invention; the composing process and revision; evaluating and responding to writing; discourse analysis. Repeatable to a maximum of 10 cr. hrs.

881 Studies in the Teaching of College Composition 881.02 Teaching of Remedial College Composition G 5
Theory and practice in the teaching of remedial college composition.

881.03 Teaching of College Composition in English as a Second Language G 5
Research in teaching English as a second language at the college level; materials and pedagogical techniques to use in teaching English as a second language courses. Prereq: 871 or Linguist 602.01 or permission of instructor.

884.01 Teaching Business and Professional Communication G 5
Theoretical foundations of and teaching techniques for major units in business communication, designed to prepare graduate students to do research in and to teach business and professional writing. Prereq: 881.01 or permission of instructor.

883 Studies in Literacy G 5
Examination of the meanings of the term "literacy" and the historical, cognitive, social, economic, artistic, and political consequences of these definitions. Wi Qtr. 2-2 hr cl. Prereq: Grad standing in English or permission of instructor. Repeatable to a maximum of 15 cr. hrs.

890 Interdepartmental Seminar in Critical Theory G 5
Interdisciplinary study of a movement (phenomenology, feminism, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr. Cross-listed in Comparative Studies in the Humanities, French, German, Spanish, and Women's Studies.

894 Group Studies G 2-5
Repeatable to a maximum of 15 cr. hrs.

895 Seminar in Research Methods in Rhetoric and Composition G 5
Advanced study in a specific quantitative or qualitative research method in rhetoric and composition. Prereq: 795 or permission of instructor. Repeatable to a maximum of 10 cr. hrs with different topics.

General Prerequisites for Courses Numbered 900

900 The Long Seminar: Research in Literary History, Theory, and Forms I G 5
Reading and research in literature, its theory and forms, and its intellectual and social backgrounds. Prereq: At least 25 cr hrs of grad instruction. Repeatable to a maximum of 10 cr. hrs. 900 must be followed by 901. Progress graded, credit awarded upon completion of 901.

901 The Long Seminar: Research in Literary History, Theory, and Forms II G 5
Continuation of 900. Prereq: 900. Repeatable to a maximum of 10 cr. hrs.

903 Teaching College English G 5
Students work as apprentices to faculty members in the planning and execution of an undergraduate English course. Arr. Prereq: PhD standing and permission of instructor. Repeatable to a maximum of 15 cr hrs with only 5 cr hrs counting toward 45 cr hr course work requirement. This course is graded S/U.

976 Problems and Methods of Literary Theory G 5
A study of the basic methodologies and theoretical problems involved in the interpretation and evaluation of literature. Prereq: 800 or equiv., or permission of instructor.

980 Bibliography and Method G 5
For advanced grad students in the methods and tools of literary research.

982 Textual Criticism and Editing G 5
Evaluation of literary editorial methods, past and present; training in skills necessary to the textual critic and scholarly editor; practice in textual editing. Prereq: 980.

993 Individual Studies G 1-15
Doctoral students may register for individual study in areas not normally covered by courses. Prereq: Permission of dept grad committee. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

996 Research in English: Candidacy Examination G Arr
Research in preparation for Ph.D. exams. Su, Au, Wi, Sp Qtr. Arr. Prereq: Permission of graduate studies director. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

997 The Dissertation Seminar G 3
Doctoral candidates present their research-in-progress to faculty and each other. Prereq: Successful completion of the General Exam. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

998 Research in English: Thesis G Arr
Research for the master's thesis. Su, Au, Wi, Sp Qtr. This course is graded S/U.

999 Research in English: Dissertation G Arr
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Entomology

103 Botany and Zoology Building, 1735 Neil Avenue, 292-8209

101 Insect Biology I U 5
Biological sciences with insects as a model: structure, function, development, and interactions with environment. Wi, Au, Sp Qtrs. 4 cr, 12 hr lab. Prereq: Math 075, 076, or 104; or Mathematics Placement Level R. GEC bio sci course.

102 Insect Biology II U 5
Continuation of 101; behavior, diversity, insect interactions with humans, pathogens, social insects. Wi, Sp Qtrs. 4 cr, 12 hr lab. Prereq: 101 or Biology 101. GEC bio sci course.

126 Introductory Insect Biology U 3
Introduction to the biology of insects and their relatives, with emphasis on behavior, ecology and diversity; collection is required. Su Qtr. Offered at the Nth Theodore Stone Laboratory. Prereq: A high school course in biology.

294 Group Studies U 1-5
Group studies in the field of the chosen problem. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

361* Apiculture U 5
The principles of management of honeybees in the production of honey, wax, package-bees, and queens in pollinating crops of economic importance. B. Smith. Sp Qtr. 3 cr, 2.2 hr lab. NS Admis Cond course.

444 Social Insects U 5
Introduction to the biology of social insects (ants, bees, wasps, termites). Sp Qtr. 3 cr, 1.2 hr lab. Prereq: 102, or Biology 102 or 114 or H116, or Plant Bio 102; and enrollment in an honors program; or equivs with permission of instructor.

460 Economic Entomology and Insect Pest Management 460.01 Lecture U 3
Survey of insects and relatives that affect public health, crops, livestock, and the home; control methods, including principles of integrated pest management. Hall and Horn. Wi Qtr. 3 cr. Prereq: Biology 100 or 113 or H115. Not open to students with credit for 460.

460.02 Laboratory, General U 2
Examination of specimens of main economic orders, and important pest species. Wi Qtr. 2.2 hr lab. Prereq or concur: 460.01. Not open to students with credit for 460.
158

Entomology

460.03 Laboratory, Horticultural Insects U 2
Examination of major arthropod pests of horticultural crops; emphasis on identification and control.
Wi Qtr. 2 2-hr labs. Prereq: 460.01 or equiv with written permission of instructor. Not open to students with credit for 561.

4611* Forest Entomology U 3
Insects and other arthropods in the forest as they relate to effective management for maximum production of wood products and sustained preservation of forests and parklands. Horn.
Wi Qtr. 3 cl. Prereq: Biology 100 or 113 or H115, and Pint Bio 102; Forestry 223 recommended.

500 General Entomology U G 5
Structure, function, development, ecology, and insect-human interactions in an evolutionary context; lab stresses classification and identification of insects; insect collection required. Foster.
Su, Au Qtrs. 3 cl, 2 2-hr labs, field trip. Prereq: 15 hr s in biological sciences. For students at the jr or sr level in biological and agricultural sciences and grad students in biological sciences.

531 Pesticides, the Environment, and Society U G 3
The chemical, physical, and toxicological properties of pesticides are related to movement in the environment, and to their biological and ecological effects. Edwards and Wilson.
Au Qtr. 3 cl. Prereq: 5 cr hrs in organic chem and 10 cr hrs in biological sciences at the 200 level or above.

532 Pesticide Regulations U G 2
Study and discussion of Ohio and U.S. pesticide regulations; rationale of the regulations will be correlated with the biological and environmental effects of pesticides. Willison.
Wi Qtr. 2 cl. Prereq or concuer: 531.

592 Workshop U G 1-5
Intensive study of a topic in entomology; the format will depend upon the topic.
Su, Au, Wi, Sp Qtrs. Art, lecs, labs, or lecs/labs. Prereq: Written permission of workshop director. Repeatable to a maximum of 6 cr hrs.

611 Field Entomology U G 5
Emphasis on collection, identification, and field methods; field trips are made to various islands of Lake Erie and the mainland. Horn and Nault.
Su Qtr (2nd term), given at Franz Theodore Stone Laboratory, 3 all-day cl.

612 Aquatic Entomology U G 5
Designed for preparation in the teaching of biology or for research on aquatic resources; emphasis on taxonomy and ecology of immature and adult aquatic insects.
Su Qtr, given only at Franz Theodore Stone Laboratory, 3 all-day cl.
Prereq: 500 or 611 or equiv.

6211* Insect Systematics and Diversity U G 5
Principles of systematic and application to insect classification and identification. Johnson.
Au Qtr. 2 cl, 6 lab hrs. Prereq: 500 or equiv.

623* Insect Morphology U G 5
Comparative external and internal anatomy of insects and other arthropods; organ systems, developmental, functional, and evolutionary contexts; individual histological projects. Klompen.
Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 500 or equiv.

626 Cladistic Methods G 3
Designed to familiarize students with the philosophy and tools of cladistic analysis to interpret current literature and to execute publishable analysis of their own data. Wenzel.
Wi Qtr. 3 cl. Prereq: EECB or Zoology 400 or equiv. Repeatable to a maximum of 8 cr hrs.

631 Insect Physiology U G 5
The general physiology of insects and other arthropods; lab stresses the use of insects to demonstrate fundamental physiological processes. Denlinger.
Au Qtr. 3 cl, 2 2-hr labs. Prereq: 500, and Chem 251 and 254, or equivs.

6411* Insect Ecology U G 5
The distribution, abundance, population regulation, plant-insect interactions, and species survival patterns of insects are analyzed in relation to microenvironment and ecosystems. Edwards.
Au Qtr. 3 2-hr lec/labs. Prereq: 500, and EECB/Pnt Bio/Zoology 413.01; or equivs.

642* Insect Behavior G 4
Introduction to mechanisms of insect behavior, behavioral physiology and ecology, and social behavior. Foster and Phelan.
Wi Qtr. 2 2-hr cl. Prereq: 500 or permission of instructor.

6451* Simulation Modeling in Applied Insect Ecology U G 5
Theory and practice of systems analysis relative to management of insect pests. Hey.
Wi Qtr. 3 cl, 2 lab hrs. Prereq: 460.01 and Math 132, or their equvls and permission of instructor.

650* Biological Control of Arthropod Pests U G 4
Wi Qtr. 3 cl, 2 lab hrs. Prereq: 20 cr hrs in life sciences, including at least one entomol course.

660 Advanced Economic Entomology U G 5
Theory, practice of pest population management, emphasizing current research, population modelling, sampling, and data analysis. Horn.
Au Qtr. 3 cl. 2 2-hr labs, field trips. Prereq: 460.02, and EECB/Pnt Bio/Zoology 413.01; or equivs with written permission of instructor.

6611* Medical Entomology U G 5
Arthropod agents and vectors of vertebrate disease; life cycles, behavior, pathogenesis, identification, control; arthropod-pathogen and arthropod vertebrate relationships; arthropod-borne disease systems. Foster.
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 500 and EECB or Zoology 610 recommended.

6621* Principles of Insect Toxicology U G 5
The properties of insecticides, modes of action, metabolism, toxicity factors, joint action, resistance, experimental procedures and interpretation of data. Fisher.
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 631 or equiv or permission of instructor.

664* Host Plant Resistance to Insects U G 3
Introduction to the theory and application of host plant resistance as a means of insect control and its integration with other insect control strategies. Hammond.
Sp Qtr. 2 11/2 hr cl. Prereq: 5 cr hrs in entomol or pnt biol; or permission of instructor; 5 cr hrs of pnt biol recommended. Not open to students with credit for this topic under 694.

670 General Acarology U G 4
An introduction to the morphology, development, and general biology of mites; laboratory consists of a taxonomic review of the families of Acari. Needham and Wrens. Su Qtr. 1 cl, 1 4-hr lab.

693 Individual Studies U 1-5 G 1-10
Individual work in the field of the chosen problems.
Su, Au, Wi, Sp Qtrs. Art. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs for undergrads and to a maximum of 30 cr hrs for gradds. No more than 5 cr hrs may be counted toward an undergraduate entomol major. This course is graded S/U.

694 Group Studies U G 2-5
Group work in the field of the chosen problems.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs for undergrads and to a maximum of 20 cr hrs for gradds.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

699.01 Domestic

998.02 Foreign

762* Environmental Toxicology and Chemistry U G 5
Technical examination of the environmental behavior of organic, inorganic, and microbial xenobiotics; emphasis on chemistry of interactions with physical environment, fugacity models, risk assessment, and predictive toxicology. Fisher.
Sp Qtr. 3 cl, 2 labs. Prereq: Chem 251 and 252.
H783 Honors Research U 3-5
A program of reading and research for each student with individual conferences, reports, and Honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work will be completed and the Arts and Sciences Honors Committee. At least 2 qtrs. are required of candidates for the degrees BA or BS with distinction in entomol. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr. hrs. This course is graded S/U.

795 Special Topics in Entomology U G 1-3
Seminar on publications, current research, or research techniques in the following topics:
A—Acarology
B—Apiculture
C—Behavior
D—Biological Control
E—Ecology
F—Economic Entomology
G—Genetics
H—Medical Entomology
I—Pathology
J—Physiology-Toxicology
K—Research methods (data analysis)
L—Systematics (evolution)
Su, Au, Wi, Sp Qtrs. 1, 2, or 3 cl. Prereq: 25 cr hrs in biological sciences at 200 level or above. Repeatable to a maximum of 10 cr hrs.

800 Entomology Seminar G 1
Faculty, graduate students, and outside speakers will participate; topics: recent advances in various entomological fields.
Su, Wi, Sp Qtrs. 1 1/2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

8311** Advanced Insect Physiology G 5
Insect biochemistry and recent advances in insect physiology; lab consists of a term project. Denlinger.
Sp Qtr. 2 cl, 2 3-hr labs. Prereq: EOS 415 or Zool 415 or 432, or equiv.

8401** Insect Chemical Ecology G 3
Chemical strategies used by insects for defense, mate finding, and host selection, techniques used for the characterization of semiochemicals. Phelan.
Sp Qtr. 1 1/2-hr cl, 1 2-hr lab. Given at CARDC, Wooster, Ohio. Prereq: 642 and Chem 251 and 254, or equivs.; or permission of instructor. Biochem 511 recommended.

870 Medical-Veterinary Acarology G 4
The mites associated with humans, domestic animals, and wildlife, stressing their ecology and behavior in relation to transmission of viral, rickettsial, bacterial, and protozoan diseases. Needham.
Su Qtr. 1 cl, 1 4-hr lab; 3 hrs cl lab daily for 3 wks.

871 Agricultural Acarology G 4
An intensive review of the mites associated with crops, ornamental plants, and stored food products with emphasis on taxonomy and ecology of these animals.
Su Qtr. 1 cl, 1 4-hr lab; 8 hrs cl/lab daily for 3 wks.

891 Interdepartmental Seminar in Environmental Biology G 2
Selected topics treating the environmental aspects of organisms, populations, and ecosystems as they may relate to time, space, and human activities.
Su, Au, Wi, Sp Qtrs. 1 1/2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. Given cooperatively by Entomology; Evolution, Ecology, and Organismal Biology. This course is graded S/U.

999 Research in Entomology G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Environmental Engineering
475 Hitchcock, 2070 Neil Drive, 292-2005

Water Resources Engineering
See Civil Eng 516

Applied Hydraulics
See Civil Eng 519

Environmental Science
240 Hitchcock Hall, 2070 Neil Avenue, 292-2265

694 Group Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

Interdepartmental Seminar in Environmental Biology
See Entomol, Microbiol, Pnt Bio, and Zoology 891.

999 Research in Environmental Science G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Evolution, Ecology, and Organismal Biology
104 Botany and Zoology Building, 1735 Neil Avenue, 292-8088

125 Introductory Aquatic Biology U 3
Components of the ecosystem in freshwater aquatic environments at Stone Laboratory.

126 Introduction to the Study of Birds U 3
An introductory course for students interested in ornithology including bird identification, behavior and ecology, with an emphasis on field and laboratory techniques.

210 Local Flora U 5
A lecture, laboratory, and field course in identifying common Ohio plants; emphasis on taxonomic principles, use of keys and manuals, and field recognition of plants. Crawford.
Su, Sp Qtrs. 3 cl, 2 2-hr labs, several Sat field trips. Prereq: Biology 114, or Pnt Bio 102 or 112, or equiv with written permission of instructor. Not open to students with credit for Pnt Bio 210. NS Admision Cond course.
232 Introductory Physiology U 5
A survey of human nerves and nervous system, sense organs, muscle function, circulation, respiration, digestion, metabolism, kidney function, and reproduction.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 5 cr hrs in general biology or general chemistry, Biology 102 or 113 recommended. Not open to students with credit for Zoology 232. Credit does not count toward a major in zoology. Not intended for biological science majors. GEC bio sci course. NS Admis Cond course.

235 Introductory Anatomy U 5
An introduction to mammalian anatomy with emphasis on human anatomy; dissection of cat.
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 5 cr hrs in general biology (Biology 102 recommended) or Anthrop 200. Not open to premedical students or students with credit for Zoology 236 or 512. Credit does not count toward a major in zoology. Not intended for biological science majors. GEC bio sci course. NS Admis Cond course.

293 Individual Studies U 1-5
Individual work in the field of the chosen problem.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 201 or 405; and written permission of instructor. Only 5 cr hrs to count on zoology major. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in Zoology 293. This course is graded SU.

294 Group Studies U 1-5
Study of selected topics in evolution, ecology, and organizational biology. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs with different topics, including cr hrs earned in Zoology 294.

322 Introduction to Ornithology U 5
The general biology of birds with emphasis on their natural histories and on the field identification of local species.
Sp Qtr. 3 cl, 2 2-hr labs. Prereq: 5 cr hrs in introductory biology. Not open to students with credit for Zoology 220 or 322. NS Admis Cond course.

350 Dynamics of the Dinosaurs U 3
Review of current information on dinosaur biology, emphasizing scientific approaches to reconstructing dinosaurs as living, dynamic animals.
Sp Qtr. 3 cl, 1 one-day field trip. Prereq: 5 cr hrs of biological science or historical geology course work. Not open to students with credit for Zoology 250 or 350.

370 Extinction U 3
Exploration of the causes of, and possible solutions to, the present-day global extinction event.
Sp Qtr. 2 1-hr cl. Prereq: 5 cr hrs of biological sciences course work.

400 Evolution U 3
Basic conceptual issues and processes in evolution with emphasis on the ecological basis of adaptation and consequences of natural selection.
Su, Au, Wi, Sp Qtr. 3 cl. Prereq: Biology 114 or H116. Not open to students with credit for Zoology 400 or 420.

H400 Evolution U 4
Basic conceptual issues and processes in evolution focusing on the ecological basis of adaptation and consequences of natural selection; class discussions, reading, and writing assignments.
Wi Qtr. 2 1 1/2-hr cl. Prereq: Biology 114 or H116, and Mol Gen 500 or 501. Not open to students with credit for 400, or Zoology 400 or 420.

405 Animal Diversity and Systematics U 4
Survey of animal diversity with emphasis on nutritional, locomotory, and reproductive strategies, and evolutionary relationships within major taxonomic groups.
Au, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 400 or Zoology 400. Not open to students with credit for Zoology 201 or 405.

410 Animal Form and Function U 3
Functional systems in invertebrates and vertebrates: respiration; circulation; water, ion, and energy balance; communication; locomotion; and reproduction.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Biology 114 or H116, Chem 122, Math 148, and Physics 111 or 131. Not open to students with credit for Zoology 410 or 623 or 654.

413 Introduction to Ecology NS Admis cond courses.

413.01 Lecture U 3
Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, and applied perspectives.
Au, Wi Qtrs. 3 cl. Prereq: 10 cr hrs in biological sciences. Not open to students with credit for Pnt Bio 313, 313.01, 313.02, or 413.01; or Zoology 313, 313.01, 313.02, 413.01, or 413.03.

413.02 Laboratory U 2
Critique of ecological primary literature, analysis of ecological data, and design and execution of experiments.
Au, Wi Qtrs. 2 cl. Prereq or concur: 413.01; or prereq: Pnt Bio 413.01 or Zoology 413.01. Not open to students with credit for Pnt Bio 313, 313.01, 313.02, or 413.02; or Zoology 313, 313.01, 313.02, 413.01, 413.02, or 413.03. Offered only at the regional campuses.

413.03 Lecture and Laboratory U 5
Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, applied perspectives, and design and execution of experiments.
Prereq: 10 cr hrs in biological sciences. Not open to students with credit for 413.01 or 413.02; or Pnt Bio 313, 313.01, 313.02, 413.01, or 413.02; or Zoology 313, 313.01, 313.02, 419.01, 419.02, or 419.03. Offered only at the regional campuses.

415 Principles of Animal Cellular and Developmental Biology U 4
Introduction to the structure and function of animal cells, and to patterns of early development in vertebrates and invertebrates.
Wi Qtr. 4 cl. Prereq: 400 or Zoology 400 recommended; Biology 113 or H115, Chem 231 or 252, and Physics 112 or 142. Not open to students with credit for Mol Gen 502; or Zoology 415, 432, 515, or 522.

440 Introductory Ethology U 5
Observations of animal behaviors, and introductory analysis of their adaptive value, physiological mechanisms, development, and evolution; emphasis on movie presentations, reading, and small-group discussions.
Sp Qtr. 4 cl, 1 2-hr field work per week. Prereq: 405, or Zoology 201 or 405. Not open to students with credit for Zoology 340 or 440. GEC third writing course.

470 Biology of Vertebrates U 5
Analysis of the anatomical, physiological, behavioral and ecological characteristics of the major vertebrate groups.
Au Qtr. 3 cl, 2 2-hr labs. Prereq: 405, or Zoology 201 or 405. Not open to students with credit for Zoology 470.

502* Plants and People U 4 4
Introductory course on the botany and historical uses of economically important plants; topics include the major food, spice, drug and industrial plants, their domestication and cultural significance. Curtis.
Wi Qtr. 3 cl, 1 arr. Prereq: 5 cr hrs in biological sciences. Not open to students with credit for Pnt Bio 502.

505 Marine Biology and Ecology U 5
Diversity and distribution of marine organisms; population dynamics, productivity, and structure of marine ecosystems; human impact on ocean resources.
Su Qtr (2nd term), Stone Lab. 3 all-day cl per week. Prereq: 405, or Pnt Bio 102 or 112, or Zoology 201 or 405, or equiv; Pnt Bio 413.02, or Zoology 413.03 recommended. Not open to students with credit for Zoology 505.

510 Field Botany U 5 5
Collection, preservation, field and laboratory identification, and local distribution of plants of the major groups.
Su, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: Biology 102 or 114, or Pnt Bio 102 or 112; or permission of instructor. Not open to students with credit for Pnt Bio 510 or 513.

512 Laboratory in Vertebrate Dissection U G 2
Introduction to the techniques of vertebrate dissection and comparative procedure.
Au, Wi, Sp Qtrs. 1 4-hr lab. Prereq or concur: 411; or prereq: Zoology 410 or 511. Not open to students with credit for Zoology 335 or 512.

514+ Laboratory in Animal Physiology U G 2
Introduction to the principles and techniques of animal physiology gained through laboratory experiments.
Wi Qtr. 1 4-hr lab. Prereq or concur: 410 or 415 or a physical course; or prereq: Zoology 410 or 415. Not open to students with credit for Zoology 514.

540 Sensory Bases of Behavior U G 5
An exploration and analysis of animal sensory mechanisms—ways in which energies and information concerning environmental events are modified and converted into meaningful biological signals.
Wi, Sp Qtrs. 5 cl. Prereq: 410 or a physical course, or Zoology 410 or 511. Not open to students with credit for Zoology 540.
Evolution, Ecology, and Organismic Biology

567 Issues of the Contemporary World U 5
Prereq: Sr standing. GEC course.

597.02 Antarctic Marine Ecology and Policy
Historical and contemporary evaluation of Antarctic resource management and its scientific basis.
Au Qtr. 3 cr, 3 1/2 h-lab cr. I597.02 (honors) may be available to students enrolled in an honors program or by permission of instructor, Prereq for H597.02: Sr standing and enrollment in an honors program. Not open to students with credit for Int Stds 597.02 or Nat Res 597.02. Cross-listed in International Studies and Natural Resources.

610 Animal Parasitology U G 5
The general principles of parasitology, emphasizing morphology, life histories, epidemiology, identification and host relationships of protozoan and metazooan parasites of zoological, medical and veterinary importance.
Au Qtr. 3 cr, 1 3-hr lab. Prereq: 405, or Zoology 201 or 405, or equiv; and jr standing or above. Not open to students with credit for Zoology 610.

611 Higher Aquatic Plants U G 5
Aquatic plants, other than the algae, of Great Lakes region; field and laboratory work on their identification and ecological and geographical relations.
Su Qtr, given only at Franz Theodore Stone Laboratory, 3 all-day cl. Prereq: Pint Bio 102 or 112, and 15 additional cr hrs in biological sciences. Not open to students with credit for Pint Bio 611.

612 Invertebrate Zoology U G 5
The collection and identification of invertebrate animals, development of methods of classification, and use of keys.
Su Qtr (2nd term), Stone Lab, 3 all-day cl per wk. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 612.

613 Biology of the Invertebrates U G 5
Ecology, evolution, morphology, embryology, and physiology of major invertebrate groups exclusive of insects; lab will illustrate lecture concepts using living and preserved material.
Au Qtr. 3 cr, 2 3-hr labs, 1 required wkend field trip to Lake Erie. Prereq: 405, or Zoology 201 or 405; English 110 or 111 or equiv; and 10 additional cr hrs in EEOB or zoology above the 200 level or equiv. GEC third writing course.

6171* Theoretical Ecology I U G 5
The models, assumptions, and conclusions of the mathematical theory of ecology including stability notions, deterministic and stochastic models, and models for patchy environments.
Wi Qtr. 5 cr. Pre req: 413.01 or 413.03, or Pini Bio 313 or 413.01, or Zoology 313 or 413.01 or 413.03, or equiv; and differential and integral calculus. Not open to students with credit for Pint Bio 617, or Zoology 617 or 714. This course is graded S/U.

621 Ichthyology U G 5
Study of the distribution and classification of fishes, which includes methods of identification, collection, and preservation.
Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 621.

6221* Herpetology U G 5
Local species of reptiles and amphibians, their habits, life histories, ecology, and classification.
Su Qtr (2nd term), Stone Lab, 3 all-day cl per wk. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 622.

624 Field Techniques in Ornithology U G 5
Topics include instinctive behavior in the life of birds, the breeding cycle, social relations, territory, ecology, characteristics of populations, and techniques in field study of birds.
Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Prereq: 10 cr hrs of bio sci course work or permission of instructor. Not open to students with credit for Zoology 624.

625 Mammalogy U G 5
Mammals of the world, their natural history, distribution, taxonomy, and major anatomical and physiological adaptations; study of local species emphasized in lab.
Wi Qtr. 3 cr, 2 2-hr labs. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 625.

626 Biology of Fishes U G 5
Lecture emphasis on the behavior, migration, distribution and evolution of fishes; laboratory emphasis on ecological and systematic ichthyology.
Sp Qtr. 3 cr, 1 3-hr lab. Prereq: 405, or Zoology 201 or 405; and 15 cr hrs in biological sciences; or permission of instructor. Not open to students with credit for Zoology 626.

630 Vertebrate Histology U G 5
Examination and analysis of the functional morphology of cells and tissues of vertebrate animals, with emphasis on mammalian histology.
Wi Qtr. 3 cr, 2 3-hr labs. Prereq: 5 or hrs in biological structure/functions (e.g., 410 or 415, or Mol Gen 502, or Zoology 410 or 415) or permission of instructor. Not open to students with credit for Zoology 530 or 630. GEC third writing course.

632 Neurobiology U G 5
Survey of neuroscience covering neuronal cell physiology, properties of neural circuits, neural development, and functional organization of nervous systems.
Sp Qtr. 5 cr. Prereq: 10 or hrs of biological sciences at 500 level or above, or grad standing. Not open to students with credit for Neurosci 724 and 725, or Zoology 532 or 632.

641* Vertebrate Reproduction U G 5
A study of the evolutionary, morphological, hormonal, and environmental aspects of reproduction in vertebrates with laboratory investigations of fish, birds, and mammals.
Au Qtr. 3 cr, 2 2-hr labs. Prereq: 405 or 410, or Zoology 405 or 410; and Vet Phys 411 or equiv. Not open to students with credit for Zoology 634.

656* Animal Biomechanics U G 5
Biomechanics of support, locomotion, feeding, and ventilatory systems; effects of size; emphasis primarily, but not exclusively, vertebrate.
Wi Qtr. 5 cr. Prereq: 410 and 512, or Zoology 410 and 512. Not open to students with credit for Zoology 511 or 654.

657* Aspects of Vertebrate Functional Anatomy U G 5
Exploration of interactions of historical, mechanical, and functional factors that affect the structure of recent vertebrates.
Wi Qtr. 4 cr, 1 3-hr lab. Prereq: 512, or Zoology 325 or 512, or equiv; or permission of instructor. Not open to students with credit for Zoology 657.

661* Animal Behavior U G 5
An experimental study of the biological basis of animal reactions.
Wi Qtr. 3 cr, 2 2-hr labs. Prereq: 440, or Zoology 540 or 540, or permission of instructor. Not open to students with credit for Zoology 640.

647 Plankton U G 5
Examination of phytoplankton and zooplankton communities, emphasizing population dynamics, seasonality, predation, and productivity; lab emphasis on identification and quantitative methods for collecting and enumerating plankton.
Au Qtr. 2 cr, 2 3-hr labs, 1 required wkend field trip to Lake Erie. Occasionally offered Su Qtr at Franz Theodore Stone Lab, Pre req: English 110 or 111 or equiv, and 20 cr hrs in biological sciences; 413.01 or 413.03 or 652 or 655, or Pint Bio 413.01, or Zoology 413.02 or 413.03 or 652 or 655 recommended. Not open to students with credit for Zoology 647. GEC third writing course.

651 Field Zoology U G 5
Field and laboratory identification of aquatic and terrestrial vertebrates and invertebrates of the region, in relation to habitats occupied.
Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Prereq: 405, or Zoology 201 or 405, or equiv. Not open to students with credit for Zoology 651.

652 Limnology at Stone Laboratory U G 5
Study of physical, geological, chemical, and biological factors influencing freshwater life; field and laboratory techniques for determining lake morphometry, chemistry and biological productivity are emphasized.
Su Qtr (1st term), Stone Lab, 3 all-day cl per wk. Pre req: 405, or Zoology 201 or 405, or equiv; 10 cr hrs in chem; 10 cr hrs in physics; and written permission of instructor. Not open to students with credit for Zoology 652.

653 Fish Ecology U G 5
Field and laboratory studies of life histories and interspecific relationships of fishes and of the various factors influencing their abundance.
Su Qtr (2nd term), Stone Lab, 3 all-day cl per wk. Overnight field trips. Pre req: 621 or Zoology 621. Not open to students with credit for Zoology 653.

654* Ecological Physiology of Aquatic Animals U G 5
Wi Qtr. 4 cr. Pre req: 410, or Zoology 410, or equiv; and 5 cr hrs each in chem, physics, and physiol. Not open to students with credit for Zoology 654, 654.01, or 654.02.

654.02 Third Writing Course U G 5
Study of the aquatic habitat including physical and chemical adjustment, tolerance, and acclimatization to environment of vertebrates and invertebrates.
Wi Qtr. 4 cr. Pre req: 410, or Zoology 410, or equiv; 5 cr hrs each in chem, physics, and physiol; and GEC second writing course. Not open to students with credit for Zoology 654, 654.01, or 654.02. GEC third writing course.
655 Limnology U G 5
A study of the physical, chemical, and biological factors influencing the biological productivity of inland waters, and of techniques and equipment used in evaluating them.
Sp Qtr. 3 cl. 1, 4-hr lab, several field trips (some Sat). Prereq: 10 or hrs in chem and 20 or hrs in biological sciences. Not open to students with credit for Zoology 655.

656 Ecosystems of the World: Temperate, Boreal, and High Latitude Ecosystems U G 5
Intermediate course in ecology emphasizing structure-function relations at broad scales incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems. Boerner.
Wl Qtr. 1 2-hr cl. 1 2/3-hr cl. Prereq: 413.01 or 413.03, or Pint Bio 413.01, or Zoology 413.01 or 413.03, or at least 16 cr hrs in natural science or natural resources, and ar or grad standing; or permission of instructor. Not open to students with credit for Nat Res 656 or Pint Bio 656. Cross-listed in Natural Resources.

657 Experimental Field Ecology U G 5
Field research projects in plant and animal and aquatic and terrestrial ecology, emphasizing experimental design, data collection, analysis, interpretation, and expression of results.
Au Qtr. Saturdays, 5AM-4:30PM. Prereq: 413.02 or 413.03, or Pint Bio 313 or 413.02, or Zoology 313 or 413.02 or 413.03, and of at least 16 cr hrs in biological sciences. Not open to students with credit for Pint Bio 657 or Zoology 657.

660* Fisheries Biology U G 5
A population dynamics approach to fishery biology emphasizing ecological relationships, yield models, and human constraints.
Wl Qtr. 3 cl. 2-2/hr labs. Prereq: 655 or Zoology 655, and English 110 or 111 or equiv. Not open to students with credit for Zoology 660. GEC third writing course.

661 Conservation Biology U G 5
Application of population and community ecology, population genetics, and biogeography to the study and conservation of biodiversity, threatened communities, and endangered species.
Au Qtr. 3 cl. 2-2/hr labs, occasional field trips (some Sat). Prereq: 16 or hrs in biological sciences above the 100 level, including 413.01 or 413.03, or Pint Bio 313 or 413.01, or Zoology 313 or 413.01 or 413.03. Not open to students with credit for Pint Bio 661.

671* Plant Population Ecology U G 5
Quantitative study of plant population processes, community organization, and ecological methods. Snow.
Au Qtr. 3 cl. 1 4-hr lab, field trips. Prereq: 413.02 or 413.03, or Pint Bio 413.02, or Zoology 413.02 or 413.03; Math 151; and 15 cr hrs in biological sciences. Not open to students with credit for Pint Bio 621.

672* Taxonomy of Vascular Plants U G 5
A laboratory, field, and discussion course concerning the classification of vascular plants; emphasis on taxonomic principles, systems of classification, family characteristics and relationships.
Sp Qtr. 3 cl. 2 2-hr labs, several Sat field trips. Prereq: 210 or Pint Bio 210, and 10 additional cr hrs in biological sciences; or permission of instructor. Not open to students with credit for Pint Bio 612.

673* Evolutionary Processes in Flowering Plants U G 5
Origin of variation in plants with emphasis on evolutionary processes unique to the flowering plants. Crawford.
Au Qtr. 5 cl. Not open to students with credit for Pint Bio 613.

674* Physiological Ecology of Plants U G 5
Physiological relationships between light, water, and mineral nutrients and plant growth including plant-insect and plant-microbe interactions. Curtis.
Au Qtr. 3 cl. 1 4-hr lab. Prereq: 413.02 or 413.03, or Pint Bio 413.02, or Zoology 413.02 or 413.03; and 15 cr hrs in biological sciences. Not open to students with credit for Pint Bio 632.

692 Workshop U G 1-6
Intensive study of topics in evolution, ecology, and organismal biology; format will depend upon the topic and time.
Su, Au, Wl, Sp Qtrs. Prereq: Permission of workshop director. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Zoology 692.

693 Individual Studies U 2-5 2-10
Individual work in the field of the chosen problem.
Su, Au, Wl, Sp Qtrs. Prereq: Permission of instructor. No more than 5 cr hrs may be counted toward an undergraduate zoology major. Repeatable to a maximum of 15 cr hrs for undergraduates, including cr hrs earned in Zoology 693. This course is graded S/U.

694 Group Studies U G 2-5
Group work in the field of the chosen problem.
Su, Wl, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs for undergraduates and to a maximum of 30 cr hrs for graduates, including cr hrs earned in Zoology 694.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wl, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs, including cr hrs earned in Zoology 697. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

168 Domestic
169 Foreign

710 Creation and Evolution: Differing World Views U G 5
Philosophical and historical survey of the controversy over evolution theory and creationist viewpoints.
Sp Qtr. 5 cl. Prereq: 10 or hrs of biology. Not open to students with credit for Pint Bio 710.

714* Theoretical Ecology II U G 5
Continuation of 617 with emphasis on populations in environments, stochastic models, and nonequilibrium theory.
Wl Qtr. 5 cl. Prereq: 617, or Pint Bio 617, or Zoology 617; or permission of instructor. Not open to students with credit for Pint Bio 714 or Zoology 714. This course is graded S/U.

720 Community Ecology and Ecosystems U G 5
A quantitative and descriptive approach to the establishment, development, succession, and dynamics of plant communities and their interactions with historic, climatic, soil, and biotic factors. Boerner.
Sp Qtr. 5 cl, several field trips. Prereq: 413.01 or 413.03, or Pint Bio 413.01, or Zoology 413.01 or 413.03, and 20 or hrs in biological sciences. Not open to students with credit for Pint Bio 620 or 620.01 or 720.

730* Bioacoustics U G 3
Theory and practice of the study of animal sound; physics of sound transmission, acoustic analysis, and the use of sound in communication.
Au Qtr. 2 cl. 1 2-hr lab, 1 Saturday field trip. Prereq: 440 or 640 or 740, or Psych 501, or Zoology 440 or 640 or 740. Not open to students with credit for Zoology 730 or 841.

740 Behavioral Ecology U G 5
Comparative study of mechanisms, ontogeny, function and evolution of behavior in its ecological and social contexts.
Au Qtr. 3 1 1/3-hr cl. Prereq: Sr standing; 640 or Psych 601 or Zoology 640, or equiv with written permission of instructor. Not open to students with credit for Zoology 740.

741* Social Behavior
741.01 Lecture U G 4
Theory of the evolution of social behavior in animals, from spacing patterns and mating systems through complex social systems including reproductive division of labor.
Wl Qtr. 2 1/2-hr cl. Prereq: 413.01 or 413.03 or 440 or 640 or 740, or Pint Bio 313 or 413.01, or Zoology 313 or 340 or 413.01 or 413.03 or 440 or 640 or 740 recommended; or permission of instructor. Not open to students with credit for Zoology 741.01.

741.02 Laboratory U G 2
DNA-based techniques for discerning genetic relatedness among individuals.
Wl Qtr. 6 hrs. Prereq: 741.01 or Zoology 741.01; and prereq or concord: Mol Gen 500 or 501; or permission of instructor. Not open to students with credit for Zoology 741.02.

H783 Honors Research U 3-5
A program of reading and research for each student, with individual conferences, reports, and Honors thesis.
Su, Au, Wl, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degrees BS or BA with distinction in zoology. Failure to receive a mark of S this course is a disqualification for special honors. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in Zoology H783. This course is graded S/U.
Family and Consumer Sciences Education

151 Campbell Hall, 1787 Neil Avenue, 292-4487

289 Introductory Field/Work Experience
Directed observation-participation experiences in schools, and/or extension or workplace settings related to teaching family and consumer sciences.
Prereq: Open to students who meet program's stated prerequisites. Repeatable to a maximum of 10 cr hrs.

304 Educational Process in Family and Consumer Sciences U 3
Planning and organizing instructional materials and experiences for non-formal educational settings.
Au, Wi, Sp Qtr's. 1 1/2-hr cl. Prereq: 3rd yr standing with 10 cr hrs in human sc major; F&H 236 or equiv, F&H 237 or equiv, and Psych 100 or 300. Not open to CMS Ed teaching majors.

367 American Family Issues and Social Action U 5
Development of writing, presentation, and oral discussion skills while critically examining family and related community issues and appropriate social action. Laster.
Au, Sp Qtr's. 1 1-hr cl, 2 2-hr cl. Prereq: English 110 or 111 or equiv; Polit Sci 201 or 200, or SocSci 101; and equiv standing. GE/CLAR course.

446 Program Planning in Family and Consumer Sciences Related Occupations U 3
Consideration of curriculum, instruction, evaluation, and other aspects of teaching in family and consumer sciences related occupations.
Su Qtr 1 2-hr cl, 1 hr for observation and participation. Prereq: 440 or 540 and 2.00 GPAHR. For vocational job training certification only.

575 Vocational Family and Consumer Sciences Job Training
Teaching
Development of basic knowledge, skills, and attitudes required for vocational certification of new non-certified vocational family and consumer sciences teachers.
Prereq: Current employment as a vocational teacher. Repeatable to a maximum of 24 cr hrs. These courses are graded S/U.

575.01 Preserve Program U 6
Su Qtr. 8 hrs/day for 20 days.

575.02 Inservice I U 2
Au Qtr. Prereq: 575.01 or ED PAES 575.01.

575.03 Inservice II U 2
Wi Qtr. Prereq: 575.02.

575.04 Inservice III U 2
Sp Qtr. Prereq: 575.03.

575.05 Two Week Follow-up Program U 4
The refinement of curriculum development, leadership, and human-relations skills required by employed, one-year certificated vocational teachers.
Su Qtr. 8 hrs/day for 10 days. Prereq: 575.04.

575.06 Inservice IV U 2
Au Qtr. Prereq: 575.05.

575.07 Inservice V U 2
Wi Qtr. Prereq: 575.06.

575.08 Inservice VI U 2
Sp Qtr. Prereq: 575.07.

589 Field Experience
Application for placement must be filed in depth qtr preceding registration. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

589.02 Family and Consumer Sciences Extension U 1-10
Supervised participation in roles and responsibilities of the extension agent in family and consumer sciences.
Au, Au, Sp Qtr's. Arr. Prereq: 3rd or 4th yr standing in human sc and written permission of instructor.

593 Individual Studies U 1-5
Problems in various phases of family and consumer sciences education. Au, Au, Wi, Sp Qtr's. 1 or more cr. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment.
Prereq: Completion of individual study plan form. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

597 International Family Issues U 5

2 2 1/2-hr cl. Prereq: Sr standing. GE/CLAR contemporary issues course.

597.01 Middle East
Au, Wi Qtr's.

597.02 Sub-Saharan Africa
Au, Wi, Sp Qtr's.

640 Workplace Education through Family and Consumer Sciences Education U G 4
Principles and procedures for integrating and administering workplace education into family and consumer sciences education, including developing family, school, and community partnerships.
Wi, Qtr. 2 2-hr cl; arr. 15 hrs field experience. Prereq: 341 or equiv, 4th yr standing, and 2.50 GPAHR; or grad standing with a 3.00 GPAHR. Not open to students with credit for 440.

660 Entrepreneurship in Family and Consumer Sciences U G 3
Application of knowledge to teaching entrepreneurship in family and consumer sciences. Laster.
Au, Sp Qtr's. 1 1/2-hr cl.

689 Family and Consumer Sciences Educational Field Experiences and Professional Development Seminars
Directed observation and teaching experiences in family and consumer sciences programs to develop critically reflective and creative teachers through journaling, action research, and portfolio development. Prereq: 4th yr grad standing; admission to a teacher education program. Not open to students with credit for 589 series. Repeatable to a maximum of 10 cr hrs.

689.01 Professional Roles and Responsibilities in Family and Consumer Sciences U G 2
Development of skills to become a critically reflective family and consumer sciences teacher.
Au Qtr. 1 2-hr cl. Prereq: 341 or grad standing. Concur: 746.01.
689.02 Collaboration for Instruction/Learning Enhancement
U G 2
Collaboration and cooperative learning strategies for working with students and teachers.
Au Qtr: 1 cr; air field experience. Prereq: 2.50 CPHR and 4th yr or grad standing; 341 or 689.01 or equiv. Concur: 746.02.

689.03 Context for Teaching and Learning U G 2
Examination of the student and social context for teaching and learning through action research and portfolio development.
Wi Qtr: 1 cr; air field experience. Prereq: 2.50 CPHR and 4th yr or grad standing; 341 or 689.02 or equiv; 743 or equiv or permission of instructor. Concur: 746.03.

694 Group Studies U G 2, 3 or 5
Selected topics in family and consumer sciences education.
Prereq: Open to students who meet program's stated prereq. Repeatable to a maximum of 10 cr hrs.

740 Trends in Family and Consumer Sciences G 3
An overview of family and consumer sciences at the elementary, secondary, higher education, and adult levels; general trends in enrollment, curriculum, supervision, administration, and research. Dohner or Burdette-Williamson.
Sp Qtr: 1.25/hr cl. Grad standing or permission of instructor.

741 Curriculum in Family and Consumer Sciences G 3
Critical analysis and development of curriculum in family and consumer sciences in terms of philosophy, design, and adaptability.
Wi Qtr: 1.25/hr cl. Prereq: Grad standing or permission of instructor.

742 Culturally Responsive Teaching U G 3
Principles and strategies for working with culturally diverse student populations, emphasizing teaching strategies and program modification.
Su Qtr: 1.25/hr cl. Prereq: Grad standing or permission of instructor.

743 Research Methods in Family and Consumer Sciences G 3
Nature of research in various areas of the field; criteria for setting up a research problem; techniques for collecting and analyzing data. Laster.
Au Qtr: 1.25/hr cl. Prereq: Grad standing or permission of instructor.

744 Evaluation in Family and Consumer Sciences G 3
Principles of evaluation, framework for evaluation, procedures for appraising student progress in the attainment of objectives, construction of evaluation instruments, analysis and interpretation of evaluation data.
Au Qtr: 1.25/hr cl. Prereq: Grad standing or permission of instructor.

745 Supervision in Family and Consumer Sciences Education G 3
Principles, models, and processes of supervision in the context of student teaching and other settings where instruction in family and consumer sciences takes place. Dohner.
Au Qtr: 1.25/hr cl. Prereq: Grad standing or permission of instructor.

746 Instruction in Family and Consumer Sciences Education U G 4
Learning and instructional theory, research, and strategies for family and consumer learning environments.

746.01 Instruction for Learning in Family and Consumer Sciences Education U G 4
Learning and developmental theory and its application to planning and instruction in family and consumer sciences education.
Su Qtr: 3-hr cl, 3-hr lab. Prereq: 341 or equiv; 2.50 CPHR and 4th yr or grad standing. Not open to students with credit for 341. Concur: 688.01. 746.02 Instruction for Interpersonal Effectiveness G 3
Social cognitive theories and related discipline and instructional theories and implementation in family and consumer sciences learning environments.
Au Qtr: 3-hr cl, 3-hr lab. Prereq: 341 or 746.01 or equiv; 2.50 CPHR and 4th yr or grad standing. Concur: 689.02 and 741 of permission of instructor.

746.03 Instruction for Problem-Based Learning U G 3
Cognitive learning and critical social theories and related instructional theories and their implementation in family and consumer sciences.
Wi Qtr: 2-hr cl, 2-hr lab. Prereq: 2.50 CPHR and 4th yr or grad standing; 341 or 746.02 or equiv; 741 or equiv. Concur: 889.03 or permission of instructor.

791 Teaching Internship in Family and Consumer Sciences Education
Ten week full-time internship in a family and consumer sciences education program under guidance of a cooperating teacher and university supervisor; includes reflective seminar.
Sp Qtr: Full-time for 1 qtr: 3-hr cl. Prereq: Completion of certification courses. Written permission of advisor. Not open to students with credit for 591.

791.01 Designing Instruction U G 4
Concur: 791.02 and 791.03.

791.02 Facilitating Learning in Family and Consumer Sciences U G 4
Concur: 791.01 and 791.03.

791.03 Professional Development and Other Instruction Supporting Experiences U G 2
Concur: 791.01 and 791.02.

793 Individual Studies G 1-5
Problems in various phases of family and consumer sciences education. Su, Au, Wi, Sp Qtr 1 or more cr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

797 Interdepartmental Seminar G 2-4
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Graduate standing or permission of instructor. Repeatable by permission.

842 Family and Consumer Sciences in Higher Education G 3
Present status and function of family and consumer sciences at the higher education level; faculty involvement within a family and consumer sciences unit and in the overall institutional setting. Dohner.
Wi Qtr: 1.3-hr cl. Prereq: 740 or equiv with written permission of instructor.

843 Seminar in Family and Consumer Sciences Education G 3 or 5
1.25/hr cl. Repeatable to a maximum of 15 cr hrs.

843.01 Family and Consumer Sciences Education Research Wi Qtr. Prereq: 743 or equiv.

843.02 Special Topics in Family and Consumer Sciences Education
Topic to be announced.

846 Family and Consumer Sciences Teaching Strategies and Learning Theory G 3
Innovative use of teaching methods; relationship to learning theory. Laster or Dohner.
Sp Qtr: 2.5-hr cl. Prereq: A course in educational psychology.

860 Change Processes in Vocational Education G 3
Study of change principles, theories, and practice related to vocational, technical, and extension education.
Wi Qtr: 1.25/hr cl. Prereq: Professional experience or grad courses in vocational education.

889 Internship G 1-15
Guided participation to enhance professional competencies in selected areas.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in family and consumer sciences and permission of instructor. Repeatable to a maximum of 15 cr hrs in any combination of decimal subdivisions. A maximum of 10 cr hrs will apply toward master's degree requirements. Application with program must be completed in qtr prior to qtr internship s to take place. Travel and subsistence costs must be borne by the student. These courses are graded SU.

889.01 Internship

889.02 Extension

889.03 Business, Industry, or Communications

889.04 Administration or Supervision

894 Group Studies G 2, 3 or 5
Selected topics in family and consumer sciences education. Open to students who meet program's stated prereq. Repeatable to a maximum of 10 cr hrs.

899 Interdepartmental Seminar G 1-5
See 797 Interdepartmental Seminars.

942 Administration in Family and Consumer Sciences G 3
Principles, trends, problems, and evaluative criteria related to family and consumer sciences units in higher education administrative structure; functions, responsibilities, and qualifications of family and consumer sciences administrative personnel.
Su Qtr: 1.3-hr cl. Prereq: MS degree in human ecology/family and consumer sciences.

946 Program Analysis and Design in Family and Consumer Sciences G 3
Theoretical approach to program development; innovation and experimentation in program design in family and consumer sciences at different levels; analysis and restructuring of existing programs; climate and strategies for change. Spiegel.
Sp Qtr: 1.25/hr. Prereq: 846 or written permission of instructor.
Family Resource Management

993 Individual Studies G 1-10
Problems in various phases of family and consumer sciences education chosen for individual study.
Su, Au, Wi, Sp Qtrs. 1 or more cont. Prereq: Completion of plan for individual study form. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

998 Research: Thesis G Arr
Research for master's thesis.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research: Dissertation G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Family Medicine

B0902B University Hospitals Clinic, 456 West 10th Avenue, 293-8792

793 Individual Studies in Family Practice P 4, 8, 16, or 24
Experience with family physician-preceptor or family practice residency program; student must achieve objectives which fall within the curriculum objectives set by the Dept of Family Medicine.
Su, Au, Wi, Sp Qtrs. Arr, Prereq: Med Coll 662 and written permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

Family Relations and Human Development

(See Human Development and Family Science)

Family Resource Management

231 Campbell Hall, 1787 Neil Avenue, 292-8063

243 Consumer Problems U 5
Common imperfections in the consumer-market interface which manifest themselves in ripoffs, misrepresentations and deceptions; remedies for problems.
Au, Sp Qtrs. 3 1/2-hr cl. Required for Consumer Affairs option. GEC social science organizations and politics course.

260 Family Financial Management I U 5
The management of family financial resources; topics include financial planning and budgeting, insurance, credit, and savings and investments.
Au, Sp Qtrs. 2-2 1/2-cl. This course is available for EM credit. A grade of C or better is required. 1/2 of 350, 360, 361, Graph 121, or permission of instructor.

294 Group Studies U 2-5
Selected topics in family resource management.
Prereq: Open to students who meet dept's stated prerequisite. Repeatable to a maximum of 10 cr hrs.

330 Introduction to Home Equipment U 5
Principles involved in the selection, construction, operation, and care of home equipment and their relation to the well-being of the family.
Au Qtr: 2 2-hr cl. 1, 2-hr lab.

340 American Households: Indicators of Economic Status U 5
Living arrangements and characteristics of American population, distribution of income, and government policy as determinants of the economic status of households.
Au, Wi Qtrs. 3 1 1/2-hr cl. Prereq: Stat 133 or 145 or 145; or Ag Econ 205; or permission of instructor. Not open to students with credit for 662. BCR/ GEC/LAR course.

351 Interiors Planning U 5
Application of design principles to interior furnishings and visual merchandising with consideration of aesthetic, economic, and social psychological factors affecting choice.
Au Qtr: 3 cl. 1 2-hr lab, 2 hrs arr. Prereq: Text & Clo 270.

351.01 Interiors Planning: Visual Merchandising
Application of interiors planning to visual merchandising. Not open to students with credit for 351.

351.02 Interiors Planning: Residential
Application of interiors planning to residential settings. Not open to students with credit for 351.

360 Family Financial Management II U 5
Introduction to family financial management applications through a case study approach.

362 Resource Management Issues for Women U 3
Issues and choices faced by women in their employment and resource management, as well as policies affecting women in these roles.
Wi Qtr: 2 1/2-hr cl. Prereq: Agr Econ 200 or Econ 100 or 200. GEC course.

425 Housing: Physical Environment
The physical aspects of both housing and the housing environment with concern for their relationships to individual and family satisfactions with housing choices.
Wi Qtr.

425.01 Housing: Physical Environment Issues U 3
Physical aspects of both housing and housing environment with concern for their relationships to individual and family satisfactions with housing choices.
Sp Qtr. 2 1 1/2-hr cl. Not open to students with credit for 425.

425.02 Housing: Physical Environment Design Application U 1
Application of the physical aspects of housing to the needs of families and individuals. Students will produce plans for house and kitchen designs.
1 2-hr cl. Concur: 425.01.

443 Private Solutions to Consumer Problems U 5
Non-regulatory solutions to imperfections in the consumer-seller interface are considered. Emerging problems are explored.
Au, Wi Qtrs. 2 2-hr cl. Prereq: 243. Econ 290. Required for Consumer Affairs option.

444 Public Solutions to Consumer Problems U 5
Public sector approaches to consumer protection and promotion of consumer safety.

451** Residential Interiors: Problems in Conceptual Visualization U 5
Exploration toward the solution of interior, environmental, and spatial problems based on space analysis and planning; emphasis on the functional spatial relationships of residential interior space to furnishings.
Sp Qtr. 3 cl. 1 2-hr lab. 2 hrs arr. Prereq: 351, 261, Graph 121, or permission of instructor.

543 Consumer Decision Making U 5
The process of decision making by consumers is analyzed and implications for consumers, sellers, and policy makers are derived.
Wi, Sp Qtrs. 2 2-hr cl. Prereq: Bus-Mktg 650 or permission of instructor. Required for Consumer Affairs option.

560 Family Financial Management III U 5
Analyze and evaluate financial decisions by families at various points in family life cycle and apply economic principles to development of aids used by families facing financial decisions.
Au Qtr. 2 21/2-hr cl. Prereq: a grade of B or better in 260, 360 or 341.02, Bus-Fin 620.

567 Families in Business U 5
Explore family business topics, including family dynamics, conflicts and relationships relative to business formation and growth, strategic management, professionalization, and succession.
Au, Sp Qtrs. 3 1 1/2-hr cl.

589 Field Work U 3-5
Observation and application of concepts and principles learned in family resource management course work to a professional setting.
Sp Qtr. 1 cl. enr. Department application must be filed two quarters in advance. This course is graded S/U.

589.02 Field Experience—Financial Management
Prereq: 110 earned cr hrs, 2.00 GPA, 560, Acct&MIS 211, 212 and written permission of instructor.

593 Individual Studies U 2-5
Problems in various phases of family resource management.
Su, Au, Wi, Sp Qtrs. 1 or more cont. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment.
Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

595 Professional Development U 2
The professional: performance, role in society, position, security, involvement in organizations, and continuing development.
Au, Sp Qtrs. 1 1 1/2-hr cl. Prereq: 372 or 243 and 3rd yr standing. This course is graded S/U.

611 Consumer Housing Problems U G 5
Production and allocation of housing and problems faced by consumers in obtaining housing.
Sp Qtrs. 2 2-hr cl. Prereq: 340 and Econ 200.
544 Quantitative Methods in Consumer Affairs (G 5)
Application of research methods and analysis of data to facilitate decision-making with respect to consumer affairs.
Au, Sp Qtrs. 2 2-hr cl. Prereq: 443, 444, 543, Agr Econ 205 or Stat 133 or 145, Cptr/Inf 101 and a second writing course. Required for Consumer Affairs option.

545 Consumer Research Practicum (G 5)
Solutions of consumer protection or satisfaction problems, including data collection and analysis, report writing, and oral presentation of research.
Sp Qtr. 1 2-hr cl. Prereq: 443, 543, 644; Communc 328, permission of instructor, 2.00 CPRH.

551 Residential Interiors: History of Design and Decoration (U 4)
Analysis of furniture styles from antiquity through the present with emphasis on aesthetic, economic, and social implications as well as influencing philosophies.
Sp Qtr. 3 1½-hr cl. Prereq: 351 or permission of instructor. Not open to students with credit for 551.

660 Family Financial Management Application (G 5)
Family financial management concepts are applied to evaluate financial goals and prepare a comprehensive financial plan for a family.
Wi Qtr. 2 2-hr cl. Prereq: 560.

694 Group Studies (G 2-5)
Selected topics in family resource management.
Prereq: Open to students who meet dept's stated prerequisites. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution (U 1-15)
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour (U 1-15)
Specific content, location, quantity(ies) of offering, and prerequisite vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

711 Housing Issues (G 3)
Study of interrelationships between housing product and process and social and economic environments.
Sp Qtr. 2 1½-hr cl.

720 Aging and Design (G 3)
Analysis and development of housing products and environment related to residential spaces for older adults based on environmental adjustment theories.
Au Qtr. 1 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Allied Medicine.

738 Graduate Study in Family Resource Management (G 2)
Introduction to Family Resource Management/Consumer Science research and curriculum. Provides orientation to research areas and methods and teaching. Supports planning for successful graduate study.
Au Qtr. 1 2-hr cl.

739 Household Economic Status: Measurement and Analysis (G 5)
Measurement and analysis of household economic status including key concepts, determinants, policy implications, and implications for research.
Au Qtr. 2 2-hr cl. Prereq: Grad standing.

740 Theories and Models of Family Resource Management (G 4)
Aspects of family life are analyzed from the perspective of family resource management theory; emphasis is placed on empirical implications of the theories.
Wi Qtr. 2 1½-hr cl. Prereq: 739, and Econ 501 or 705 or equiv.

741 Managerial Concepts and Their Measurement (G 4)
Tools and techniques which are applicable to resource allocation decisions in a specific household.
Sp Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 739 and 740.

782 Classroom Application of Family Resource Management (G 3)
Analysis of educational research and theory applied to teaching Family Resource Management subject matter in higher education.
Wi Qtr. 2 1-hr cl, 1-hr arr.

791 Research Practicum in Family Resource Management (G 2-5)
Supervised participation in research; involvement may include data collection and analysis or manuscript preparation; credit will be determined by involvement and level of responsibility.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing, a statistics course, and permission of instructor. Repeatable to a maximum of 20 cr hrs. Supplements individual studies (FM RES M 793) and facilitates students' ability to participate in research.

792 Teaching Practicum in Family Resource Management (G 2-5)
Supervised participation in college teaching; Nature and degree of involvement are based on student's preparation; credit will be determined by involvement and level of responsibility.
Su, Au, Wi, Sp Qtrs. Prereq: 782, Grad standing, and permission of instructor. Repeatable to a maximum of 20 cr hrs. Supplements individual studies (FM RES M 793) to facilitate students' ability to document their teaching experience.

793 Individual Studies (G 2-5)
Problems in various phases of family resource management chosen for individual study.
Su, Au, Wi, Sp Qtrs. 1 or more cont. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

841* Family Resource Management: Development and Theory (G 3)
Historical development and present trends in family resource management with emphasis on theory and practice.
Au Qtr. 2 1½-hr cl. Prereq: 739, 740, 741, or written permission of instructor.

862* Household Economic Status: Theory and Research (G 5)
Interpretation of theory and research related to household economic status.
Sp Qtr. 2 2-hr cl. Prereq: 739, Econ 705 and 706 or equiv, and Stat 520 or equiv.

872* The Consumer in American Society (G 3)
Analysis of the elements involved in the consumer interest, interrelationships of the elements, cost effectiveness of these methods, and distributional impacts of the alternatives.
Wi Qtr. 2 1½-hr cl. Prereq: Econ 705 and 706 or equivs; and 3 or hrs of stat.

881* Quantitative Methods in Family Resource Management (G 5)
Multivariate statistical methods are applied to research questions in family resource management. The emphasis is on advanced topics relevant to analysis of cross-sectional data.
Sp Qtr. 2 1½-hr cl. Prereq: Basic course in statistics and permission of instructor.

894 Group Studies (G 2-5)
Selected topics in family resource management.
Prereq: Open to students who meet dept's stated prerequisites. Repeatable to a maximum of 10 cr hrs.

895 Seminar in Family Resource Management (G 3-5)
3 cr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs including cr hrs in 822.

895.01 Consumer Economics
895.02 Family Finance
895.05 Household Technology
895.06 Housing

993 Individual Studies (G 1-5)
Problems in various phases of family resource management chosen for individual study.
Au, Wi, Sp Qtrs. 1 or more cont. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

998 Research: Thesis (G Arr)
Research for master's thesis.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research: Dissertation (G Arr)
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Food, Agricultural and Biological Engineering

200 Agricultural Engineering Building, 590 Woody Hayes Drive, 292-6131

**General Prerequisites for Courses Numbered 200**

Unless otherwise indicated, the prerequisites for 200-level courses are 45 cr hrs in college courses, exclusive of ROTC and phy ed; or specified course(s) numbered 100-199.

**225 Introduction to Food, Agricultural and Biological Engineering**

U 3

Principles of engineering problem solving and communications, statistical description and inference applied to agricultural, food and environmental problems.

Au Qtr. 2 cl, 1-2 hr lab. Prereq: Soph standing in eng. Third writing course component. GEC course.

**294 Group Studies U 1-5**

Basic studies in Food, Agricultural and Biological Engineering.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**General Prerequisites for Courses Numbered 300 and 400**

Unless otherwise indicated, the prerequisites for 300- and 400-level courses are 90 cr hrs in college courses, exclusive of ROTC and phy ed; or specified course(s) numbered 100-399.

**325 Biometeorology of Plant and Animal Systems**

U 3

Study of the micro- and macro-environmental variables in nature as they relate to engineering of plant and animal production systems. Kletec.

Wi Qtr. 3 cl. Prereq: Soph standing in eng.

**373 Principles of Soil and Water Engineering**

U 3

Applications of level and chain surveying, hydrology, and soil dynamics to problems in Food, Agricultural and Biological Engineering. Ward.

Sp Qtr. 3 cl, 1-2 hr lab. Prereq: Eng Mech 220 or 400.

**425 Analysis of Elementary Biological-Physical Systems**

U 4

Mathematical model formulation and analysis techniques developed and applied to elementary biological and physical systems. Lichtensteiger.

Wi Qtr. 3 cl, 2-3 hr lab. Prereq: Math 255 or 415.

**481 Introduction to Food Process Engineering**

U 4

Introduction to engineering operations in food processing, process control and instrumentation, emphasizing heat transfer and fluid flow. Shellhammer.

Au Qtr. 3 cl, 2-3 hr lab. Prereq: Math 151 and Physics 112. Open to non-engineering majors only. Offered in cooperation with Food Science and Technology.

**489 Professional Practice U 2**

Preparation and submission of a comprehensive report, based on a pre-assigned outline, of actual co-op employment in industry.

Su, Au, Wi, Sp Qtrs. Prereq: Admission to Co-Op Program in Food, Agricultural and Biological Engineering. Repeatable to a maximum of 10 cr hrs. Open only to dept majors.

**General Prerequisites for Courses Numbered 500**

Unless otherwise indicated, the prerequisites for 500-level courses are 15 cr hrs in courses in the same discipline numbered 200 or higher; or 10 cr hrs in courses numbered 200 or higher in the same discipline; plus 10 cr hrs in courses numbered 200 or higher in specified allied disciplines; or baccalaureate degree.

**525 Electrical Power Systems for Agriculture**

U 4

Design and specification of systems and components essential for the distribution of electrical power and for the control of electrical systems for agricultural production units. Lichtensteiger.

Sp Qtr. 3 cl, 2-3 hr lab. Prereq: 425.

**545 Agricultural Structures U G 4**

Analysis and design of frames and members for agricultural structures.

Au Qtr. 3 cl, 2-3 hr lab. Prereq: Eng Mech 220 or 400.

**565 Utilization of Energy in Agriculture U G 4**

Study of motive and stationary power needs of agriculture, mechanics of traction, characteristics of power sources, morphology of off-road vehicle design.

Sp Qtr. 3 cl, 1-2 hr lab. Prereq: 425 and Mech Eng 501.

**573 Engineering Soil-Water Management U G 4**

Engineering design of drainage, irrigation, and erosion control systems for optimum crop growth, environment, and related water storage structures. Ward.

Au Qtr. 3 cl, 3-1 hr lab. Prereq: 373 and Civil En 413 or equiv.

**584 Food Process Engineering U G 4**

Principles of food process engineering with emphasis on design of freezing and drying equipment and thermal sterilization processes. Sastry.

Wi Qtr. 3 cl, 2-3 hr lab. Prereq: Mech Eng 501.

593 Individual Studies U G 1-5

Advanced study of problems not included in regular courses of this department.

Su, Au, Wi, Sp Qtrs. This course is graded SU.

**General Prerequisites for Courses Numbered 600**

Unless otherwise indicated, the prerequisites for 600-level courses are 15 cr hrs in the same discipline numbered 300 or higher; or 10 cr hrs in courses numbered 300 or higher in the same discipline, plus 10 cr hrs in courses numbered 300 or higher in specified allied disciplines.

**625 Modeling and Design of Biological Systems**

U G 4

Application of transport processes, enzyme kinetics and the simulation of plant and animal growth to the analysis and design of biological systems and processes. Christy.

Au Qtr. 3 cl, 1-2 hr lab. Prereq: 425, Cptr/Int 541, Mech Eng 510 or equiv.

**645 Environmental Engineering of Agricultural Structures U G 4**

Functional requirements and principles involved in housing animals and crops; analysis of factors and properties affecting energy exchanges with the environment.

Wi Qtr. 4 cl. Prereq: 325, Eng Mech 430 and Mech Eng 510.

**650 Design of Waste Management Systems U G 4**

Application of bioengineering principles of pollution control in the design of management systems for wastes from food and fiber production, storage, and processing operations.

Sp Qtr. 3 cl, 1-3 hr lab. Prereq: Sr standing in engineering, or permission of instructor.

**673 Design of Agricultural Water Management Systems U G 4**

Basic knowledge of water management principles and introduction to agricultural drainage and irrigation methods and their applications.

Wi Qtr. 2-3 hr cl. Prereq: 573 or grad standing in engineering or permission of instructor.

**692 Similitude Theory and Applications U G 3**

Similitude theory and applications in engineering and bio-engineering experimental research and development.

Sp Qtr. 3 cl. Prereq: Sr standing in engineering.

**693 Individual Studies U G 1-5**

Advanced studies in Food, Agricultural and Biological Engineering with principal emphasis on design.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**595 Professional Development U G 1**

Needs and programs for professional development in engineering related to food, agriculture, and environment; communication for professional advancement, engineering ethics, and responsibilities to society.

Su, Wi, Sp Qtrs. Prereq: 15 cr hrs of 500 level or higher Food, Agricultural and Biological Engineering courses. Repeatable to a maximum of 10 cr hrs. This course is graded SU.

**694 Group Studies U G 1-5**

Advanced studies in Food, Agricultural and Biological Engineering with principal emphasis on design.

Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

**705 Professional Development U G 1**

Needs and programs for professional development in engineering related to food, agriculture, and environment; communication for professional advancement, engineering ethics, and responsibilities to society.

Su, Wi, Sp Qtrs. Prereq: 15 cr hrs of 500 level or higher Food, Agricultural and Biological Engineering courses. Repeatable to a maximum of 10 cr hrs. This course is graded SU.

**724 Capstone Design in Food, Agricultural and Biological Engineering I U G 2**

Methodology of design; practice in the design and communication of a specific system within the student’s area of specialization.

Wi Qtr. 2-3 hr cl. Prereq: 525. GEC course.

**725 Capstone Design in Food, Agricultural and Biological Engineering II U G 3**

Continuation of 724.

Sp Qtr. 1-2 hr cl, 1-2 hr lab. Prereq: 724. GEC course.

**784 Advanced Food Process Engineering U G 3**

Application of heat and mass transfer, fluid flow, food properties, and food processing constraints in the design and selection of food process equipment. Sastry.

Sp Qtr. 3 cl. Prereq: Chem Eng 420, Mech Eng 510, or equiv. Offered in cooperation with Food Science and Technology.

**General Prerequisites for Courses Numbered 800 and 900**

Unless otherwise indicated, the prerequisites for 800- and 900-level courses are 30 cr hrs in courses in the same discipline, or 20 cr hrs in the same discipline, plus 25 cr hrs in specified allied disciplines.

**810 College Teaching in Engineering U G 3**

Preparation for instruction in engineering at the college level. Focuses on skills, strategies and issues common to university teaching and engineering instruction more specifically. Qualification.

Sp Qtr. 3-3 hr cl. This course is graded SU.
Food Science and Technology

122 Vivian Hall, 2121 FYffe Road, 292-6281. Fax: 292-0218

170 Wine in Western Culture U 4
The role of wine in western culture with emphasis on the geographic origins, production, and specific uses of wine types. Roehrig
Au Qtr. 4 cl. Not open to students with credit for Hort 170.

201 The Science of Food U 5
Food and nutrition in modern civilization; principles involved in assembling, processing, and distribution of food, and the role of science, industry, and government in meeting food needs.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113 or equiv. Not open to students with credit for FD ScNu 100 or Food Tec 241. BERG/GECLAR course.

210 Dairy Products Evaluation U 2
Major commercial dairy products are evaluated following the rules of the National Dairy Products Evaluation Contest. Travel may be required.
Au, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. This course is graded S/U.

289 Food Industries Field Experience U 3
Ten weeks practical experience or equivalent in an approved food plant or laboratory; written report required.
Su, Au, Wi, Sp Qtrs. Open only to students majoring in food science.

Introduction to Food Process Engineering
See Agr Eng. Offered in cooperation with Agricultural Engineering.

401 Introduction to Food Processing U 3
Unit operations in food processing, basic elements of food processing equipment, product formulation, food manufacturing, quality control, cleaning, and sanitizing. Harper
Au Qtr. 1 cl, 2 3-hr labs. Not open to students with credit for 537.

423 Analysis of Food Components U 2
Analysis of macro and micro food components as would be required in a quality assurance laboratory for a food company.
Wi Qtr. 2 2-hr labs. Prereq: 401. Not open to students with credit for 540.02 or Hort 640.

Marketing Dairy Products
See Agr Econ 429. Offered in cooperation with Agricultural Economics.

493 Individual Studies U 1-5
Individual study course to permit undergraduate students to explore in-depth selected areas of food science and nutrition.
Su, Au, Wi, Sp Qtrs. 3, 6, 9, 12, or 15-hr lab. Prereq: 2.5 CPRH and written permission of instructor. Repeatable to a maximum of 10 cr hrs.
This course is graded S/U.

494 Group Studies U 3-5
Group studies on selected topics in food science and nutrition.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. H494 (honors) may be available to students enrolled in the honors program or by written permission of instructor. Repeatable to a maximum of 15 cr hrs.

541 Physical Properties of Foods U 4
Elements of identification and measurement of physical properties of foods and application to food systems. Zhang
Wi Qtr. 3 cl, 2-hr lab, 1-hr workshop. Not open to students with credit for 537.

589 Professional Experience U 5
Ten weeks of supervised structured in-depth industrial experience in selected food related subjects. Su, Au, Wi, Sp Qtrs. Arr. Prereq: 20 cr hrs of 500-level courses or above in major field, and permission of instructor. Open only to students majoring in food science and nutrition. Repeatable to a maximum of 10 cr hrs. Experience must be obtained with organization approved by the dept.

Food Science and Technology

122 Vivian Hall, 2121 FYffe Road, 292-6281. Fax: 292-0218

170 Wine in Western Culture U 4
The role of wine in western culture with emphasis on the geographic origins, production, and specific uses of wine types. Roehrig
Au Qtr. 4 cl. Not open to students with credit for Hort 170.

201 The Science of Food U 5
Food and nutrition in modern civilization; principles involved in assembling, processing, and distribution of food, and the role of science, industry, and government in meeting food needs.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or 113 or equiv. Not open to students with credit for FD ScNu 100 or Food Tec 241. BERG/GECLAR course.

210 Dairy Products Evaluation U 2
Major commercial dairy products are evaluated following the rules of the National Dairy Products Evaluation Contest. Travel may be required.
Au, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. This course is graded S/U.

289 Food Industries Field Experience U 3
Ten weeks practical experience or equivalent in an approved food plant or laboratory; written report required.
Su, Au, Wi, Sp Qtrs. Open only to students majoring in food science.

Introduction to Food Process Engineering
See Agr Eng. Offered in cooperation with Agricultural Engineering.

401 Introduction to Food Processing U 3
Unit operations in food processing, basic elements of food processing equipment, product formulation, food manufacturing, quality control, cleaning, and sanitizing. Harper
Au Qtr. 1 cl, 2 3-hr labs. Not open to students with credit for 537.

423 Analysis of Food Components U 2
Analysis of macro and micro food components as would be required in a quality assurance laboratory for a food company.
Wi Qtr. 2 2-hr labs. Prereq: 401. Not open to students with credit for 540.02 or Hort 640.

Marketing Dairy Products
See Agr Econ 429. Offered in cooperation with Agricultural Economics.

493 Individual Studies U 1-5
Individual study course to permit undergraduate students to explore in-depth selected areas of food science and nutrition.
Su, Au, Wi, Sp Qtrs. 3, 6, 9, 12, or 15-hr lab. Prereq: 2.5 CPRH and written permission of instructor. Repeatable to a maximum of 10 cr hrs.
This course is graded S/U.

494 Group Studies U 3-5
Group studies on selected topics in food science and nutrition.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. H494 (honors) may be available to students enrolled in the honors program or by written permission of instructor. Repeatable to a maximum of 15 cr hrs.

541 Physical Properties of Foods U 4
Elements of identification and measurement of physical properties of foods and application to food systems. Zhang
Wi Qtr. 3 cl, 2-hr lab, 1-hr workshop. Not open to students with credit for 537.

589 Professional Experience U 5
Ten weeks of supervised structured in-depth industrial experience in selected food related subjects. Su, Au, Wi, Sp Qtrs. Arr. Prereq: 20 cr hrs of 500-level courses or above in major field, and permission of instructor. Open only to students majoring in food science and nutrition. Repeatable to a maximum of 10 cr hrs. Experience must be obtained with organization approved by the dept.

597 Contemporary Issues in Food Science and Nutrition U 5
Prereq: Sr standing. GEC contemporary world course.

597.01 Alcohol and Society
The historical, nutritional, medical, social, technical, and economic aspects of the use of beverage and industrial alcohol. Roehrig
Wi, Sp Qtrs. 2 2-hr cl.

601 Food Analysis U 5
Basic composition, chemical structures and properties of foods; and chemical and instrumental analyses of food components. Min.
Au Qtr. 4 cl, 1 3-hr lab. Prereq: Chem 252. Not open to students with credit for 521 or 522.

605 Advanced Food Chemistry U 4
Advanced coverage of the chemical reactions of food components with emphasis on the reaction mechanisms responsible for changes in food products. Mangino
Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 601, Chem 252 and Biochem 511. Not open to students with credit for 641.

607 Processing of Fluid Milk and Related Products U 4
Principles involved in the production, processing, and marketing of high quality, safe, and nutritious milk and milk products. Alvarez
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 401 and Microbiol 509. Not open to students with credit for 631.

611 Cheese and Fermented Foods U 4
Principles and practices related to the manufacture, processing, distribution, and marketing, nutritional value and safety of fermented foods. Courney
Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 401, 522, or 602, and Microbiol 509. Not open to students with credit for 634. Field trips may require extra time for students.

612* Frozen and Concentrated Foods U 4
Principles and practices of science and engineering of concentrated and frozen foods and their unit operations. Hansen
Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 401 and 522 or 602. Not open to students with credit for 633.

613 Fruit and Vegetable Processing U 4
Commercial processing of fruits, vegetables and related products. The effect of processing and raw product chemistry on final product quality.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: 401. Not open to students with credit for Hort 641.

621 Food Additives U 3
Chemical and physical nature of food additives; functions and effects on chemical, rheological, microbiological, and nutritional properties of foods. Chism
Au Qtr. 3 cl. Prereq: 15 cr hrs in food science or related area.

630 Principles of Food Processing U 4
Principles of science and engineering applied to food processing and their unit operations including concentration, separation, and thermal sterilization processes. Bannier
Wi Qtr. 3 cl, 2 2-hr lab. Prereq: Stat 125 or 145 or Agr Educ 387 or Agr Econ 205 or Agronomy 210 or Anim Sc 210. Not open to students with credit for 531.

632 Sensory Properties and Evaluation of Foods U 3
Fundamentals of sensory perception, taste, and odor classification and threshold values; subjective and objective evaluation of foods; panel selection and interpretation of results; industrial applications.
Sp Qtr. 2 cl, 1 2-hr lab. Prereq: Stat 125 or 145 or Agr Educ 387 or Agr Econ 205 or Agronomy 210 or Anim Sc 210. Not open to students with credit for 531.

636 Food Microbiology U 5
Microorganisms in relation to the production, processing and handling of food with emphasis on sanitation and public health problems. Yousef
Au, Sp Qtrs. 3 cl, 2 2-hr labs, 1 discussion. Prereq: Microbiol 509 or 521. Not open to students with credit for 625 or Microbiol 636. Cross-listed in Microbiology.

640 Food Regulations U 3
Food laws, regulations and the technical control of processed foods.
Wi Qtr. 3 cl. Prereq: 401. Not open to students with credit for 640.01 or Hort 640.

648 Essentials of Food Plant Operation U 3
An in-depth presentation of the special factors affecting food plant organization, production, procurement, distribution, and the interaction required to develop plant operations. Bash
Sp Qtr. 3 cl. Prereq: 401. Not open to students with credit for Hort 648.
649 Packaging Materials and Methodology U G 4
A discussion of terminology and literature of commercial packaging, principal methods of packaging, and principles of selecting packaging materials. Zharog.
Sp Qtr. 3 cl. 1 hr. lab. Prereq: 541, 601. Not open to students with credit for Hort 649.

650 Food Product Development U G 5
Development of a new food product including generation of concepts, consumer panel testing, development of prototypes, process optimization and consumer testing.
Sp Qtr. 2 cl. 2-3 hr. labs. 1 hr. arr. Prereq: 621; 401 or 630; one course in stat.

H683 Honors Projects U 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in honors program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 260, 292, H583, H599, 693, or H693. This course is graded S/U.

Advanced Food Process Engineering
See Agril Eng 684. Offered in cooperation with Agricultural Engineering.

692 Workshop in Milk and Food Sanitation U G 1-2
Five day in-depth program on fundamentals of milk and food protection; designed for individuals interested in food processing, distribution; quality control, public health, and regulatory activities. Alvarez.
Sp Qtr. 15 or 30 hrs contact during the week between winter and spring qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 3 cr hrs.

693 Individual Studies U G 3-5
Individual project studies of current problems; planning, conducting, and reporting research.
Su, Au, Wi, Sp Qtrs. 9-, 12-, or 15-hr lab. Prereq: 2.50 GPA and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Selected topics in food science and technology.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr hrs.

696 Technical Problem Solving U G 5
Analysis of technical problems in food science; fostering creative thinking to the approach and solution of problems; preparation and oral presentation of papers. Harper.
Sp Qtr. 3 cl. 2-2 hr. labs. Prereq: 541, 602, 4th yr standing, second writing course, and prereq or concur 622. Not open to students with credit for 689. GEC course.

723 Food Structure and Interactions U G 5
Macrostructure and texture of foods; relationship to food components and interactions, and physical properties of foods; application of light and electron microscopy. Hansen.
Su Qtr. 3 cl. 2-3 hr. labs. Prereq: 15 cr hrs in food science or related areas.

736 Advanced Food Microbiology G 3
Microbiological aspects of food preservation, detection of microbiological contaminants, hazards, and microorganisms of public health significance. Richter.
Wi Qtr. 3 cl. Prereq: 636 or Microbiol 836, and Chem 123. Not open to students with credit for 701 or Microbiol 736. Cross-listed in Microbiology.

761 Advanced Nutrient Utilization I U G 5
In-depth treatment of digestion, absorption, transport, and utilization of dietary carbohydrates and fat for energy production and fat deposition in humans and other higher animals. Alford.
Wi Qtr. 5 cl. Prereq: Biochem 511 or equiv and Humn Ntr 310 or Animal, Dairy, Petry Sc 430 or equiv.

762 Advanced Nutrient Utilization II U G 5
In-depth treatment of digestion, absorption, transport, and utilization of proteins, amino acids, and vitamins in humans and other higher animals; energy reactions and requirements. McCune.
Sp Qtr. 5 cl. Prereq: 761.

799 Teaching Experience in Food Science and Nutrition G 1-6
Teaching at the higher education level, instructional development under faculty guidance, experience in testing and evaluation of students, and analysis of teaching performance.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and prior or concurrent enrollment in teaching methods course of workshop. Repeatable to a maximum of 10 cr hrs. Provides teacher training and evaluation which is recognized on transcript.

820 Flavor Chemistry G 3
Chemical properties, formation mechanisms, isolation, separation, identification and food applications of flavor compounds.
Wi Qtr. 3 cl. Prereq: 601, 605, and 621.

821* Food Lipids G 3
Chemical, physical, and biological properties of food lipids. Min.
Au Qtr. 3 cl. Prereq: 634 or permission of instructor.

822* Food Proteins G 3
Sources of chemical, physical, and biological properties of food proteins; effect of food composition, handling, and processing of protein characteristics and functionalities. Mangino.
Wi Qtr. 3 cl. Prereq: one course in physical chemistry or permission of instructor.

830 Advanced Studies in Nutrition G 3
Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 761, 762; Animal Sc 630 or 631 or Dairy Sc 630 or 631 or Humn Ntr 610; 10 grad cr hrs in physiology. Not open to students with credit for Animal Sc 630; Dairy Sc 630; Humn Ntr 630, or Petry Sc 830. Cross-listed in Animal Science, Dairy Science, Human Nutrition and Food Management, and Poultry Science.

830.01**Energy
830.02 Minerals
830.03*Protein and Amino Acids
830.04 Vitamins
830.05 Lipids
830.08*Carbohydrates

833 Research Methods in Food Science G 5
Principles and application of selected instrumental methods of analysis of food systems; visual, ultraviolet, and infrared spectroscopy, partition, absorption, gel permeation, gas liquid chromatography, electrophoresis, and radioisotopes. Morr.
Wi Qtr. 3 cl. 2-3 hr lab. Prereq: Permission of instructor.

850 Seminar G 1
Graduate student-staff participation in a study of teaching and research trends and opportunities; critical analysis of research approaches, findings, and publications.
Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 6 cr hrs.

850.01 Food Science
850.02 Nutrition

861 Topics in Advanced Nutrition G 3
Systematic treatment and evaluation of areas of publications of current interest in nutrition; topics will be announced quarterly. Alford and Roehrig.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 762. Repeatable to a maximum of 9 cr hrs.

892 Interdepartmental Seminar in Plant Physiology G 1
Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Not open to students with 12 cr hrs in Agronomy 892; Biochem 892, Plant Bio 892, or Hort 892. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Agronomy 892, Biochem 892, Plant Bio 892, and Hort 892. Cross-listed in Agronomy, Biochemistry, Horticulture, and Plant Biology. This course is graded S/U.

898 Interdepartmental Seminar in Nutrition G 1
A seminar in nutrition and in related fields of food technology.
Sp Qtr. Given cooperatively by Animal Science, Dairy Science, and Food Science and Technology. This course is graded S/U.

903 Individual Studies G 1-5
Research experience and preparation of technical paper.
Su, Au, Wi, Sp Qtrs. Prereq: 15 cr hrs of grad level courses in food science or technology. For Plan B, M5 degree students only. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

998 Research: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Forestry

School of Natural Resources
210 Kottman Hall, 2021 Coffey Road, 292-2265

General Prerequisites for Courses Numbered 200
Unless otherwise indicated, the prerequisites for 200-level courses are 45 cr hrs in college courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-199.

221 Biology and Identification of Woody Forest Plants U 5
Field identification of trees, shrubs, and vines in temperate forest ecosystems; basic biological principles of morphology, reproduction, growth, genetics, and taxonomy of major woody species. Hix and Howe. Au Qtr. 3 cl, 1 1/2 hr lab.

General Prerequisites for Courses Numbered 300 and 400
Unless otherwise indicated, the prerequisites for 300- and 400-level courses are 90 cr hrs in college courses, exclusive of ROTC and phys ed; or specified course(s) numbered 100-399.

322 Forest Ecosystems U 5
Structure and function of temperate forest ecosystems; field-oriented study of the relations among ecosystem components, and of the composition and successional dynamics of forest communities. Hix. Au Qtr. 3 cl, 1 1/2 hr lab. Prereq or concur: Nat Res 100; Forestry 221 or Peti Bio 210 or H&CS 234 or permission of instructor.

323 Forest Biometry U 5
A study of the quantitative decision tools necessary to measure the forest environment, biodiversity, and productivity of a forest ecosystem. Hix and Howe. Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Nat Res 222.

333 Silviculture U 3
333.01 Lecture
Ecological principles and practical applications of methods for controlling forest ecosystem structure and function, including regeneration and tending approaches which support a variety of benefits. Hix. Sp Qtr. 3 cl. Prereq or concur: Nat Res 200 or equiv.

333.02 Field Laboratory
Field-oriented course stressing prescription of silvicultural practices and systems for achieving and sustaining desired forest ecosystem conditions; emphasis on management of selected forest ecosystems. Hix. Sp Qtr. 1 hr cl and 1 1/2 hr lab, 1 or 2 all-day field trips. Prereq or concur: 333.01 or 321.

432 Forest Industries II U 5
A detailed study of the harvesting and manufacturing processes used to produce forest products; the relations governing workshop safety and environmental aspects of forest products. Romig. Wi Qtr. 5 cl.

General Prerequisites for Courses Numbered 500
Unless otherwise indicated, the prerequisites for 500-level courses are 15 cr hrs in courses in the same discipline numbered 200 or higher, or 10 cr hrs in courses numbered 200 or higher in specified allied disciplines; or baccalaureate degree.

533 Forest Field Laboratory U 6
An intensive field course stressing field observation, analysis, and interpretation of mensurational and ecological data in the preparation of alternative silvicultural prescriptions for forested areas. Au Qtr. Arr. H&CS 250 and 323. Offered off-campus during Labor Day and first day of Autumn Quarter.

593 Individual Studies U G 2-5
Special problems in the field of forestry and forest products. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded SU.

French

248 Curzy Hall, 1841 Millikin Road, 292-4938

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) or with high advanced courses. Students who need to satisfy the Arts and Sciences language requirement must demonstrate competence at the 104 level.

101 Elementary French I
Introduction to French; development of listening, reading, speaking, and writing skills.
Su, Au, Wi, Sp Qtrs. Not open to students with credit for 100.02 or to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GPC for lang courses. FL Admis Cond courses.

101.01 Classroom Track U 5
Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.
101.51 Individualized Track U 1-5
Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 101.52. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement.

102 Elementary French II
Continuation of 101, further development of listening, reading, speaking, and writing skills.
Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis Cond courses.

102.01 Classroom Track U 5
Prereq: 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.
102.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 101.01 or 5 cr hrs in 101.51, or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

102.66 Intensive French for Review I U 5
Classroom track; review of basic structures, vocabulary, and skills needed for entry into 103.
Prereq: 2 or more years of high school French and placement in 101 by placement exam. Students must register for and complete 5 cr hrs during the qtr. Not open to native speakers of French through regular course enrollment or EM credit or to students with credit for 101.01, 101.51, 102.01, or 102.51.

102.66 Intensive French for Review I U 1-5
Individualized track; review of basic structures, vocabulary, and skills needed for entry into 103.
Prereq: 2 or more years of high school French and placement in 101 through placement exam. Students must register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

103 Intermediate French I
Continued study of French; development of listening, reading, speaking, and writing skills; readings based on contemporary French culture and literature.
Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.01 Classroom Track U 5
Prereq: 102.01, or 102.66, or 5 cr hrs of 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.
103.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 102.01, or 102.66, or 5 cr hrs of 102.51 or permission of instructor. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

103.66 Intensive French for Review II U 5
Classroom track; intensive review of basic structures, vocabulary, and skills needed for entry into 104.
Prereq: 100.01 or 5 cr hrs of 101.51, or 3 or more yrs of high school French and placement into 102 by placement exam. Students must register for and complete 5 cr hrs during the qtr. Not open to native speakers of French through regular course enrollment or EM credit or to students with credit for 102.01, 102.51, 102.66 103.01, or 103.51.

103.66 Intensive French for Review II U 1-5
Individualized track; intensive review of basic structures, vocabulary, and skills needed for entry into 104.
Prereq: 101.01 or 5 cr hrs of 101.51, or 3 or more yrs of high school French and placement into 102 by placement exam. Students must register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.66, level of 80% required for advancement to the next level. Not open to credit or to students with credit for 102.01, 102.51, 102.66, 103.01, or 103.51.
104 Intermediate French II
Prereq: 103.01 or 103.66 and 5 or 6 hrs of 103.51 or 112. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Only one of the decimal subdivisions may be taken for credit. GEC for lang courses.

104.01 Conversation and Composition U 5
Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary.
Su, Au, Wi, Sp Qtrs. Students not planning to continue in French may substitute any or EM for the following decimal subdivisions for 104.01.
Course conducted in French. This course is available for EM credit.

104.02 Conversation U 5
Emphasis on speaking and aural comprehension with special attention to practical situations.
Su, Au, Wi, Sp Qtrs.

104.03 Contemporary French Society U 5
Emphasis on various aspects of contemporary French cultures; readings and discussion in French.
Su, Au, Wi, Sp Qtrs.

104.04 Civilization U 5
Aspects of French civilization; geography, history, social developments, and the arts; readings and discussion in French.
Au, Wi, Sp Qtrs.

104.51 Conversion and Composition U 1-5
Continued development of listening, speaking, reading, and writing with an emphasis on oral and written skills; focus on functional topics and thematic vocabulary.
Su, Au, Wi, Sp Qtrs. Prereq: Grade of 5- or above in 103.01, 103.66, or 5 cr hrs in 103.51. Permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qr. Proficiency at the level of 80% is required for advancement from 1 cr hr to the next.

112 Intermediate French U 5, 10, or 15
Elementary and intermediate French; intensive drill in form, syntax, vocabulary, and idiom; reading of short stories, novels, and plays.
Su Qtr. 15 cl. Enrollment limited to 20 students. Prereq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in French will enroll for 15 cr hrs. Registration for cr hrs enrolled a student will attend class throughout entire qr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC for lang course. FL Admis Cond course.

150 French Literature in Translation: Literature and French Identity from Renaissance Princes to Capitalist Entrepreneurs U 5
Examination of key humanist and enlightenment works of literature (Rabelais, Montaigne, Lafayette, Voltaire) and challenges to them by science, society, ideologies (Descartes, Moliere, Rousseau, Balzac).
Conducted in English. Not open to French majors. GEC arts and hums lit course.

151 Masterpieces of French Literature in Translation U 5
Introduction to the French novel, drama, and poetry by major modern writers.
Conducted in English. Not open to students with credit for 273. GEC arts and hums lit course.

152 Introduction to Francophone African and Caribbean Literatures in Translation U 5
Introduces students to the literatures and cultures of important non-Western regions of the Francophone world and develops their analytical reading and writing skills.
Conducted in English. GEC arts and hums lit course.

201 Introduction to Reading of Literary and Cultural Texts
Designed to stimulate oral and written expression through the use of literary and cultural readings, to develop the ability to read critically, and to build analytical vocabulary.
Prereq: 104.01 or 5 cr hrs of 104.51 or permission of instructor. Not open to students with credit for 105 or 206.

201.01 Classroom Track U 5
Au, Wi, Sp Qtrs. Prereq: 102.01 (honors) may be available to students enrolled in honors program; others by permission of dept. Course conducted in French.

201.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 or 6 hrs during the qr. Proficiency at the level of 80% is required for advancement from 1 cr hr to the next.

206 Introduction to Business French U 5
A preparatory course to the study of business French, focusing on the development of language skills within a business context.
Prereq: 104. Credit does not count toward the minimum number of hrs required for the French major. Intended for students pursuing the business French sequence (206, 406, and 706). Conducted in French.

293 Individual Studies U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

294 Social Studies U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

401 French Grammar Review U 5
Oral and written review of French grammar.
Au, Wi, Sp Qtrs. Prereq: 105 or 201.

402 Intermediate French Conversation U 3
Practice in speaking French, building of practical vocabulary; emphasis on comprehension and oral expression.
Wi, Sp Qtrs. Prereq: 105 or 201. Not open to native speakers of this language through regular course enrollment or EM credit.

403 Intermediate French Composition U 3
Basic kinds of French prose and techniques of composition; practice in writing letters, essays, descriptive, narrative, and personal compositions.
Wi, Sp Qtrs. Prereq: 401. Not open to native speakers of this language through regular course enrollment or EM credit.

404 French Pronunciation U 5
Formation of French sounds, rules of pronunciation and diction; lectures and practical exercises; use of phonetic symbols.
Au Qtr. Prereq: 105 or 201.

406 Business French U 5
An introduction to business French with emphasis on basic business terminology, commercial correspondence, similarities and differences in business transactions, and international procedures.
Au Qtr. Prereq: 206 or any 400-level course or permission of instructor.

418 Teaching Language and French Culture: A Multimedia Approach U 5
Exploration of an aspect of French culture through the use of varied multimedia tools (e.g., CD-roms, music, film, internet) and strengthening of oral and written language skills; topics vary.
Wi Qtr. 2-2 hr cl. Prereq: 201 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

425 French Literature and Society U 5
Readings and analysis of the relationship between literature and society represented in different genres and periods of French literature.
Au, Sp Qtrs. 2-2 hr lec/disc. H425 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 201; 401 recommended.

426 French Literature and the Self U 5
Readings and analysis of various concepts of the self as represented in different genres and periods of French literature.
Wi Qtr. 2-2 hr lec/disc. H425 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 201; 401 recommended.

427 Francophone Literature: from Empire to Nation U 5
Readings and analysis of French-language literary texts as these relate to issues of empire, nation, and identity.
Sp Qtr. 2-2 hr lec/disc. H427 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 201; 401 recommended. Not open to students with credit for 424.

440 Introduction to the Study of Contemporary French Culture U 5
Introduction to ways of studying major aspects of French culture by means of lectures, readings, research projects, in-class presentations, and research reports.
Au Qtr. Prereq: 201. Conducted in French.

498 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

498.01 Domestic

498.02 Foreign
571 Basic French for Graduate Students U G 5
Designed primarily for students who have no formal preparation in French; covers basic grammar and vocabulary.
Su, Au Qtrs. Prereq: Grad standing. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit.

572 French for Research I G 3
Su, Wi Qtrs. Prereq: Grade of C or above in 571, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit. Repeatable twice. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

573 French for Research II G 3
Su, Sp Qtrs. Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hours required for the master's or doctoral degrees. No audit. Repeatable twice. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.

601 Advanced French Grammar U G 5
Systematic review of French grammar with composition and other exercises based on contemporary authors: modern tendencies in syntactic analysis.
Au, Sp Qtrs. Prereq: 401 and another 400-level language or literature course other than 404.

602 French Translating U G 5
An introduction to the theory of translation and practice of translation (French to English and English to French) based on texts reflecting different types of written communication.
Wi Qtr. Prereq: 601 or equiv.

603 Advanced Spoken and Written French U G 3
Intensive practice in speaking and writing French; based on contemporary usage.
Sp Qtr. Prereq: 402, 403, and 601 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit.

604 Advanced French Pronunciation and Phonetics U G 3
Training in auditory and oral aspects of French pronunciation; special emphasis on analysis of different types of spoken French.
Wi Qtr. Prereq: 404 or permission of instructor.

631 French Literature U G 2-5
Topic varies.
Su Qtr. Prereq: Three of the following: 421, 422, 423, or 424; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

643 From Absolute Monarchy to World War II U G 5
Political and cultural history of France from Absolute Monarchy to World War II.
Wi Qtr. 2-2.5 hr cl. Prereq: 401 and 440, or permission of instructor. Not open to students with credit for 641.

644 French Civilization since World War II U G 5
The transformation of French society since World War II as a result of changing social and political structures.
Sp Qtr. 2 hr cl. Prereq: 401 and 440, or permission of instructor.

651 French Literature of the Renaissance U G 5
Selections from Marot, Rabelais, the Pléiade and Montaigne; the age of humanism and the transition from medieval to modern forms and ideas.
Prereq: 10 cr hrs of literature courses; or permission of instructor.

652 French Literature of the 17th Century U G 5
The formation of the classic spirit; the perfection of dramatic form and the 17th-century portrait of human life.
Wi Qtr. Prereq: 10 cr hrs of literature courses; or permission of instructor.

653 French Literature of the Enlightenment U G 5
The ideas of the 18th century in relation to modern times; emphasis on Montesquieu, Voltaire, Diderot, and Rousseau.
Prereq: 10 cr hrs of literature courses; or permission of instructor.

654 French Literature from Romanticism to Realism U G 5
Major currents in French literature from 1800 to 1870.
Prereq: 10 cr hr of literature courses.

655 French Literature from Naturalism to World War I U G 5
French literature from 1870 to 1914: the naturalist and symbolist schools; the various literary current of the early 20th century.
Sp Qtr. Prereq: 10 cr hrs of literature courses.

656 French Literature between the Two Wars U G 5
Major literary currents and authors from 1914 to 1940.
2 2-2.5 hr cl. Prereq: 10 cr hrs of literature courses.

657 Literature of the Francophone World U G 5
Prereq: 10 cr hrs of literature courses or permission of instructor.

657.01 Francophone Literature from Black Africa and the Caribbean
Major intellectual and literary currents in black Africa and the Caribbean.

657.02 Literature from North Africa
Major intellectual and literary currents in francophone North Africa.

657.03 Quebec Literature
Major intellectual and literary currents in Quebec.

658 Literature in France since 1940 U G 5
Major literary currents and authors in France from 1940 to the present.
Prereq: 10 cr hrs of literature courses.

663 Women in French Literature U G 5
Examination of representations of women in selected works of French literature from the 17th to the 20th centuries.
Prereq: 10 hrs of literature courses or permission of instructor.

671 French Cinema to 1945 U G 5
The history and esthetics of French cinema from its beginnings to 1945.
Prereq: 10 cr hrs in literature and/or cinema above 200 level or permission of instructor. Taught in English.

672 French Cinema, 1945 to Present U G 5
The history and esthetics of French cinema from 1945 to the present.
Prereq: 10 cr hrs in literature and/or cinema above 200 level or permission of instructor. Taught in English.

693 Individual Studies U G 1-15
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694 Group Studies U G 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Wi, Au, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

701 French Language Usage U G 5
Advanced study of present-day French language, with emphasis on more complex and finer morphological, syntactic, semantic, and stylistic distinctions, as well as on idiomatic expression.
Prereq: 601.

702 Advanced Translation and Comparative Stylistics U G 5
Theory of translation and a comparative study, through specific exercises and intensive translation, of the stylistic resources of French and English.
Sp Qtr. Prereq: 602 or permission of instructor.

706 France: Geographical Setting and Socio-economic Structures U G 5
A study of the French geographic, economic, and social environment as it relates to business; parallel emphasis on advanced language skills.
Prereq: 406 or permission of instructor. Taught in French.

710 Contrastive Structures of French and English U G 5
Comparison of the linguistic structures (phonology, morphology, syntax, and semantics) of French and English with special emphasis on the problems of English-speaking students.
Wi Qtr. Prereq: 601 or permission of instructor.

712 French Phonology and Morphophonemics U G 5
The organization of the French sound system, its evolutionary tendencies, and its role in the articulation of the morphemes of the language.
Prereq: 601 or permission of instructor.

714 Aspects of Morphology, Syntax, and Semantics of French U G 5
Selected aspects of the morphological, syntactic, and lexical organization of modern French and the role of these subsystems in the communication of meaning.
Prereq: 712 or permission of instructor. Not open to students with credit for 818.
716 Survey of Medieval French Literature U G 5
716.011 Introduction to Medieval French
Introduction to medieval French grammar and vocabulary, using a
medieval text as vehicle.
Prereq: 601 or permission of instructor. Not open to students with credit
for 811.
716.021 Introduction to Medieval Occitan
Introduction to the language and literature of medieval Occitan, especially
to that of the troubadours.
Prereq: 716.01 or permission of instructor.
721 Survey of Medieval French Literature U G 5
Survey of French literature of the Middle Ages from its inception to Villon,
with emphasis on different literary genres (topics, narrative fiction, poetry,
theatre).
Prereq: Three of the following: 421, 422, 423, or permission of instructor.
741 Topics in French Culture and Civilization U G 5
Analysis of French culture through the study of selected topics in literatures,
film, and social thought; topic varies.
Prereq: 640 or 641 or permission of instructor. Repeatable to a maximum
of 15 cr hrs.
751 Studies in Genre and Mode U G 5
Intensive study of the history and/or aesthetics of a specific literary genre
or mode such as theatre, poetry, irony, humor.
Prereq: One 600 level course and permission of instructor for undergraduates. Repeatable to a maximum of 10 cr hrs.
H783 Honors Research U 3-5
Offers undergraduates with special aptitudes a greater opportunity to do
independent study than is possible in the ordinary course; work in
conference, library, or phonetics laboratory.
Su, Au, Wi, Sp Qtr. Prereq: 4th yr standing with a grade of A in at least half
of the French courses and an average of B in the remainder; permission of
instructor under whose supervision the work is to be completed and the
Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs.
This course is graded S/U.
792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest;
topics to be announced.
Sp Qtr. Prereq: Grad standing or permission of instructor(s). Repeatable
to a maximum of 15 cr hrs with permission of dept.
801 Teaching French at the College Level G 5
Methods and techniques for teaching French language at the college level.
Au Qtr. Two wks intensive workshop previous to qtr followed by a 2-hr wkly
collaboration in the Dept of French and Italian or permission of instructor.
Not open to students with credit for Ed-T & T & L 801.01 or Ed-T & T 801.01.
For students enrolled in this course, the minimum number of credit hours required for graduation is increased by 5 hrs.
Cross-listed in Educational Teaching and Learning as 801.01.
821 Masterworks of Medieval French Literature G 5
Intensive study of influential authors and anonymous masterpieces of
French literature between 1100 and 1500.
822 Topics and Problems in Medieval French Literature G 5
Intensive exploration of a special topic or problem, with readings in
relevant criticism and scholarship.
Sp Qtr. Prereq: 821. Repeatable to a maximum of 15 cr hrs.
823 Topics and Problems in 16th-Century French Literature G 5
Intensive exploration of a special topic or problem, with readings in
relevant criticism and scholarship.
Prereq: 651 or permission of instructor. Repeatable to a maximum of 15 cr hrs.
824 Topics and Problems in 17th-Century French Literature G 5
Intensive exploration of a special topic or problem, with readings in literary
works and in relevant criticism and scholarship.
Prereq: 652 or permission of instructor. Repeatable to a maximum of 15 cr hrs.
825 Topics and Problems in 18th-Century French Literature G 5
Intensive exploration of a special topic or problem, with readings in literary
works and in relevant criticism and scholarship.
Wi Qtr. Prereq: 653 or permission of instructor. Repeatable to a maximum
of 15 cr hrs.
826 Topics and Problems in 19th-Century French
Literature G 5
Intensive exploration of special topics or problems with readings in literary
works in relevant criticism and scholarship.
Wi Qtr. Prereq: 654, 655, or permission of instructor. Repeatable to a
maximum of 15 cr hrs.
827 Topics and Problems in 20th-Century French
Literature G 5
Intensive study of a specific topic or problem with readings of selected
literary and critical works.
Prereq: 656 or equiv. Repeatable to a maximum of 15 cr hrs.
828 Topics in Francophone Literature G 5
In-depth study of a theme, genre, movement, or author from a non-
European area of the francophone world.
Wi Qtr. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.
831 Seminar in French Literature G 2-5
Su (2-3 cr hrs), Au (5 cr hrs) Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
833 Seminar in French Literature G 3-5
Wi Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.
850 Seminar in French Linguistics G 5
Detailed exploration of selected topics in French linguistics with extensive
analysis of French language data relevant to the topic.
Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
870 Seminar in French Cinema G 3-5
Detailed exploration of particular topics or periods in French cinema with
extensive analysis of individual films and readings in relevant theory and
criticism.
Prereq: 671 or 672 or permission of instructor. PhD candidates may repeat
to a maximum of 15 cr hrs.
883 Introduction to Graduate Study in French G 5
Basic tools for literary research and history, and major areas of literary
criticism.
Au Qtr. Not open to students with credit for 886. Repeatable to a maximum
of 30 cr hrs.
885 Introduction to Contemporary Critical Theory G 5
Selected readings covering the range of critical approaches to literature.
Wi Qtr.
887 Problems of Textual Analysis G 5
Intensive work in literary and linguistic analysis of texts from various
periods and genres.
Sp Qtr. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in
884.
890 Interdepartmental Studies in Critical Theory G 5
Interdisciplinary study of a movement (phenomenology, deconstruction,
etc.) or problem (intentionality, evaluation, etc.) in literary theory.
Prereq: Background in critical theory recommended. Repeatable to a
maximum of 10 cr hrs. Cross-listed in Comparative Studies in the
Humanities, English, German, Spanish, and Women's Studies.
893 Individual Studies G 1-5
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable
to a maximum of 15 cr hrs. This course is graded S/U.
894 Group Studies G 1-15
Investigation of minor problems in the various fields of French literature
and language.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable
to a maximum of 30 cr hrs.
899 Interdepartmental Seminar G 2-5
Two or more departments present seminars on subjects of mutual interest;
topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a
maximum of 15 cr hrs with permission of dept.
999 Research in French Language or Literature G Arr
Research for thesis and dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Geodetic Science

470 Hitchcock Hall, 2070 Neil Avenue, 292-2771

294 Group Studies U 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

5071* Mapping the World U 5
Scientific and technological bases of modern mapping science and its contribution to contemporary world issues.
Au Qtr. 4 cl, 1-3 hr lab. Prereq: Sr standing. GEC/LAR course.

General Prerequisites for all 600-Level Courses
Prerequisites for all 600-level courses are Math 153 and Physics 131.

601 Introduction to Mapping and Photogrammetry U G 5
Introduction to mapping and photogrammetry; modern methods and instrumentation; basic analytical procedures.
Au Qtr. 4 cl, 1-3 hr lab. Prereq: Math 153 and Physics 131.

603 Remote Sensing of Environment U G 4
The energies of the natural and cultural environment, current remote sensing systems, and case histories of applications in measuring the environment.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: Civil En 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Civil En 603. Cross-listed in Civil Engineering.

604 Terrain Analysis U G 4
Principles and applications of photo pattern analysis, geologic and geomorphologic patterns, terrain studies, and land use suitability and capability mapping.
Au Qtr. 3 cl, 1-3 hr lab. Prereq: Civil En 405 or Survey 450 or equiv with written permission of instructor. Not open to students with credit for Civil En 604. Cross-listed in Civil Engineering.

607 Fundamentals of Geographic Information Systems U G 4
Basic principles of geographic and land information systems and their use in spatial analysis and information management.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: Sr standing. Not open to students with credit for Geog 695, or 607 in C&R Plan, Civil En, Geog, Geol Sci, or Nat Res. Cross-listed in City and Regional Planning, Civil Engineering, Geography, Geologic Sciences, and Natural Resources.

612 Topics in Geodesy U G 4
Geometry of the ellipsoid; geodetic coordinates computations for short and medium lines; geodetic datums; Earth's gravity field; artificial geodetic Earth satellites; and figure of the Earth.
Au Qtr. 3 cl, 1-3 hr lab. Prereq: 501 or Survey 511 or written permission of instructor. Not open to students with credit for Survey 628 or for grad credit to students with credit for 658, 776 or 777, or Survey 612.

623 Topics in Photogrammetry U G 4
Techniques, equipment for mapping and point determination; concept, methods, results of block adjustment; image-based maps; computer-assisted and controlled-data processing; terrestrial and space photography.
Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 601 and 650; or permission of instructor. Not open to students with credit for 628, 725, 726, 727, or 728.

624 Advanced Topics in Photogrammetry U G 4
Photogrammetric aerotriangulation; analytical point positioning, applications in terrestrial photogrammetry and camera calibration; data capture for digital elevation models; orthophotography.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 450 or 650; and 623; or permission of instructor. Not open to students with credit for Survey 515.

6261 Land Information Management U G 4
Land information as a resource in an information society, land information systems (LIS), and issues related to the implementation and development of LIS.
Au Qtr. 3 cl, 1-3 hr lab. Prereq: Survey 625 or permission of instructor.

628 Analytical Photogrammetry I U G 4
Analytical photogrammetry and mathematical models, measurement and reduction of image coordinates; bundle adjustment; analytical camera calibration; aerotriangulation; analytical plotters.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 650 or permission of instructor. Not open to students with credit for 628.

629 Digital Photogrammetry I U G 4
Introduction to digital photogrammetry; digital image processing for photogrammetry; computer vision; human visual system; data acquisition, hardware and software.
Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 450 or 601; or permission of instructor. Not open to students with credit for 728.

630 Fundamentals of Computer-Assisted Cartography U G 4
Basic principles of cartographic methods as applied to computer-assisted topographic mapping systems and their use in land information management.
Au Qtr. 3 cl, 1-3 hr lab. Prereq: Grad standing in good sci or written permission of instructor.

632 Large Scale and Topographic Mapping U G 4
The concepts, theories, and principles of large scale mapping with emphasis on design, production, and use of digital topographic maps.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 630 or permission of instructor.

6331 Digital Surface Models U G 4
Principles of digital surface modeling and their applications with the aid of computer-based techniques.
Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 630 and 632, or permission of instructor; and 650; or prerequisite concordance for Geog 683.02. Not open to students with credit for 631.

634 Digital Mapping Systems U G 4
Survey and evaluation of digital mapping systems with respect to components, accuracy, and efficiency.
Sp Qtr. 1 cl, 3-3 hr labs. Prereq: 633 or permission of instructor.

635 Map Projections U G 4
The principal map projections of the sphere; their distortions, properties, and usage.
Wi Qtr. 3 cl, 1-3 hr lab.

637 Topics in Mapping U G 4
A survey of cartographic fundamentals in the context of contemporary developments.
Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 630 or equiv. Not open for grad credit to students with credit for 632, 633, or 732.

6381 Topics in Land Information Management U G 3
Overview of topics in geographic and land information systems (GIS/ILS) and land information management (LIM).
Sp Qtr. 3 cl. Prereq or concordance for Geog 601 or written permission of instructor. Not open to students with credit for 626 or Survey 625.

640 Decision-Making with GIS U G 3
Examination of decision-making processes; examination of GIS functionality to assist decision-making processes; practical examples and case studies.
Su Qtr. 2 1-1 hr cl, 1-3 hr lab. Prereq: 630 or 607; or 607 in C&R Plan, Civil En, Geog, or Nat Res; or permission of instructor. Not open to students with credit for 694D. Practical aspects of using GIS is a decision-making environment. Emphasis is on working in a multi-disciplinary team-based environment, using GIS as a support and analysis tool.

650 Adjustment Computations I U G 5
Classification of errors: measures of dispersion; variance and covariance; propagation of errors; weights, observables, and normal equations, algorithms, and examples; statistical tests; error ellipses.
Au Qtr. 4 cl, 1-3 hr lab. Math 153 or equiv.

651 Adjustment Computations II U G 4
A posteriori variance; representation of residuals; condition equations with and without parameters; stochastic or weighted constraints; datum parameters; prior information; special test statistics; algorithms and examples.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 650 or equiv.

658 Geometric Geodesy U G 4
Historical development; geometry of the reference ellipsoid; reductions/ use of ellipsoid as a reference surface; major geodetic control; introduction to advanced geometric geodesy: principal conformal projections.
Wi Qtr. 4 cl. Prereq: Survey 511 or equiv.

660 Geographic Reference Systems U G 5
Geodetic and astronomic coordinates, ellipsoidal geometry, geodetic datums, terrestrial and celestial reference systems, reduction of celestial coordinates, polar motion, time systems.
Wi Qtr. 4 1-1 hr cl, 1-3 hr lab. Prereq: 650 or equiv.

664 Geodetic Astronomy U G 4
 Stellar coordinate systems; stellar positions and motions; time; star catalogues; principles of position determination.
Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 650 or equiv.

693 Individual Studies U G 2-9
Assignes reading laboratory or field work, under the guidance of a staff member, arranged to meet the requirements of individual students.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded SU.
785 Managing Spatial Data Structures for Computer Mapping G 4
Introduction to spatial data structures for computer mapping; implementation of domain-specific data structures using Avenue scripting and C++. 
Au Sp Qtr 3 1 hr-cl, 1 3-hr lab. Prereq: Cpt/Inf 222 or equiv; Geod Sci 634 or permission of instructor. The course will introduce spatial data structures and illustrate their management in an object-oriented programming environment. Labs will implement domain-specific computer programming exercises using Avenue scripting and C++ programming languages.

828* Advanced Photogrammetric Applications G 4
Design, implementation, and analysis of advanced analytical photogrammetric techniques to a variety of measurement tasks.
Wi Qtr 2 cl, 2 3-hr labs. Prereq: 728 or permission of instructor.

829* Advanced Digital Image Acquisition in Photogrammetry G 3
Methods and systems of acquiring digital imagery; theory and applications of error corrections; assessment of image quality.
Wi Qtr 2 cl, 1 3-hr lab. Prereq: 774.

830* Advanced Methods of Processing Digital Imagery in Photogrammetry G 3
Utilization of advanced methods of image processing and computer vision techniques as it pertains to digital photogrammetry.
Sp Qtr 2 cl, 1 3-hr lab. Prereq: 628 or written permission of instructor.

831* Advanced Pattern Recognition and Interpretation Methods in Digital Mapping G 3
Methods of pattern recognition, feature extraction, feature and object classification, as it pertains to digital photogrammetry and digital cartography.
Wi Qtr 2 cl, 1 3-hr lab. Prereq: 830.

835* Advanced Cartography G 4
A review and examination of current research, development, and thinking in cartography with particular attention to mapping from space platforms.
Wi Qtr 3 cl, 1 1-hr lab. Prereq: 732 or written permission of instructor.

837 Computational Cartography G 4
Computational techniques and computational complexity of various operations of digital mapping will be examined.
Sp Qtr 3 1 hr-lec, 1 3-hr computer lab. Prereq: 786 or Cpt/Inf 680 or permission of instructor.

862 Adjustment Computations for Random Processes G 3
Mixed model, optimal and robust prediction, hypothesis testing. Dynamic Linear Model, Kalman filtering, robust versus adaptive filtering, smoothing, spatial processes, covariance function, variogram, homoeogram, kriging.
Sp Qtr 3 cl. Prereq: 782 or equiv.

871* Advanced Gravimetric Geodesy G 4
Boundary-value problem; use of spherical harmonics; statistical application; appropriate representations; computations in space; combination of gravimetric and satellite data.
Wi Qtr 3 cl, 1 3-hr lab. Prereq: 782 and 777; or equivs.

873* Advanced Satellite Geodesy G 4
Dynamics of earth orbiting satellites; equations of motion and their solutions; advanced data acquisition method; analysis for the gravity field and station positions.
Sp Qtr 3 cl, 1 3-hr lab. Prereq: 782 and 777; or equivs.

875* Spectral Methods in Gravimetric Geodesy G 3
Spectral analysis theory and techniques in gravimetric geodesy.
Sp Qtr 2 cl, 1 3-hr lab. Prereq: 871.

885 Research Principles and Techniques G 2-9
Su, Au, Wi, Sp. Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

887 Seminar G 1-5
Su, Au, Wi, Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

894 Group Studies G 2-9
Su, Au, Wi, Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

899 Interdepartmental Seminar G 1-5
Topics to be announced each quarter offered.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

998 Research in Geodetic Science: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. This course is graded S/U.
Geography

1036 Derby Hall, 154 North Oval Mall, 282-2514

120 Earth Systems II: Atmospheric Environment U 5
Introduction to the characteristics and processes of the Earth's atmosphere and their linkage with other physical systems of the planet and with human activity.
2 1-1/2-hr lecs, 1 1-1/2-hr rec. H120 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq for 120: Geol Sci 100. Prereq for H120: Geol Sci 100 or permission of instructor. Not open to students with credit for 220. GEC phys sci course.

200 World Regional Geography U 5
An examination of the human and physical geographic structure of all world regions; defined primarily at the continental scale and classified by their level of development.
Su, Au, Wi, Sp Qtr. 3 1-1/2-hr cl. H200 (honors) may be available Au Qtr to students enrolled in an honors program or those approved by the UVC or ASC Honors offices. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

210 Physical Geography and Environmental Issues U 5
Introductory physical geography from an environmental perspective, including the interaction of physical and social factors in the causes of and strategies for ameliorating environmental problems.
Su, Au, Wi, Sp Qtr. 2 1 1/3-hr lecs, 1 1/3-hr rec. Not open to students with credit for 120. GEC phys sci course.

220 Introduction to Physical Geography U 5
The elements and processes of the natural environment, their characteristics, distribution, and implications in the human habitat.
Su, Au, Wi, Sp Qtr. 5 cl. H220 (honors) may be available Sp Qtr to students enrolled in an honors program; others with permission of dept. NS Admis Cond course.

240 Economic and Social Geography U 5
Geographic analysis of selected economic and social issues at global, national, and metropolitan scales; locational, spatial interaction, and map analysis of population, urbanization, and development issues.
Su, Au, Wi, Sp Qtr. 5 cl. H240 (honors) may be available Wi Qtr to students enrolled in an honors program or by permission of dept. GEC soc sci human, natural, and economic resources course. SS Admis Cond course.

280 Map Reading and Interpretation U 5
An introduction to reading topographic and thematic maps; map interpretation, analysis, and use.
Sp Qtr. 3 cl., 2 labs.

294* Group Studies U 3-5
Students are given the opportunity to pursue special studies not otherwise offered.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs.

400 Geography of United States and Canada U 5
Geographical analysis of North America: spatial patterns and processes associated with resources, economic structure, population, urbanization, income, and trade at national, regional, and urban scales.
Au, Wi, Sp Qtrs. 3 1-1/2-hr cl. H400 (honors) may be available to students enrolled in an honors program or by permission of instructor. GEC social diversity course.

401 Geography of Ohio U 3
An appraisal of geographic factors in the settlement and development of Ohio; an overview of the evolution of the Ohio economy.
Sp Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv.

460 Political Geography U 5
The global economy, spatial integration, and uneven development; states, spatial fragmentation, and uneven development; and the politics of space of nations, regions, and localities.
Au Qtr. 2 2-hr cl. Not open to students with credit for 560. GEC soc sci organizations and policies course.

505 Geography of Latin America U 4
Geographic analysis of Middle and South America emphasizing the interrelationships of the resource base, cultural characteristics, and outside influences upon economic development.
Au, Wi Qtrs. 3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

505.01 Middle America
Au Qtr.

505.02 South America
Wi Qtr.

510 Geography of Western Europe U G 4
Geographic factors in the economic, social, and political progress of the nations of Western Europe; major problems of the area in the light of their geographic background.
Sp Qtr. 3 cl. Prereq: Either 200, 220, 240, or equiv; or permission of instructor.

511* Geography of Eastern Europe U G 4
Resources, their assessment, and development, and related problems in Eastern Europe; the geographic significance of each area to the Communist bloc and to the West.
Wi Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

512 Geography of the Soviet Union U G 4
The major regional divisions of the Soviet Union; the resource base in relation to the economic and political aims of the Soviet state.
Au Qtr. 3 cl. Prereq: Either 200, 220, or 240, or equiv; or permission of instructor.

520 Climatology U G 5
The elements and the controls of climate, types of climate and their distribution; climates and their effects on the economic and other activities of humans.
Au, Wi Qtrs. 5 cl.

580 Elements of Cartography U G 5
A study of the cartographic techniques of map compilation and presentation including generalization, symbolization, reprojection, and simple computer mapping with an emphasis on thematic mapping.
Au, Sp Qtrs. 2 cl., 2 2-hr labs.

597 Issues of the Contemporary World U 5
Prereq: Sr standing. GEC contemporary world courses.

597.01 World Urbanization
An examination of geographic aspects of the urbanization process in the world's major regions; interrelationships between urbanization and economic development.
Au, Wi, Sp Qtrs. 2-2.2-hr cl. Not open to students with credit for 450 or 597.

597.02 Integrated Earth Systems: Confronting Global Change
Introduction to numerous global change issues through the exploration of the integrated Earth system; problem-solving strategies within an interdisciplinary team environment.
Wi Qtr. 2 1.5-hr cl. 1 1 1/2-hr lab. Not open to students with credit for Geog 594 Sp Qtr 1993.

Antarctic Marine Ecology and Policy
See EEOB/Int Stats/Nat Res 597.02.

605* Special Problems in the Geography of Latin America U G 5
The analysis of selected topical problems in Latin American geography; typical problem areas are urbanization, industrialization, transportation, agricultural development, and regional development.
Wi Qtr. 3 cl. Prereq: 505 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

607 Fundamentals of Geographic Information Systems U G 4
Basic principles of geographic and land information systems and their use in spatial analysis and information management.
Wi Qtr. 3 cl., lab arr. Prereq: Geog major or permission of instructor. Not open to students with credit for 585; or 607 in C88 Plan, Civil En, Geod Sci, Geol Sci, or Nat Res. Cross-listed in City and Regional Planning, Civil Engineering, Geodetic Science, Geodetic Sciences, and Natural Resources.

608 South Africa: Society and Space U G 5
The geography of apartheid; its social and historical conditions; the changing geography of apartheid and its politics; South African exceptionalism.
Wi Qtr. 2 2-hr cl.

512 Special Problems in the Geography of the U.S.S.R. U G 5
Spatial analysis of selected topical problems in Soviet geography.
Wi Qtr. 4 cl. Prereq: 512 or permission of Instructor. Repeatable to a maximum of 10 cr hrs.

620 Synoptic Meteorology Laboratory U G 3
Introduction to reading and interpretation of synoptic weather maps and diagrams- and data-communications systems.
Au Qtr. 2 cl., 1 lab hr. Prereq or concu: 520 or Atoms Sc 230. Not open to students with credit for Atoms Sc 520. Cross-listed in Atmospheric Sciences.
622 Microclimatolgy U G 5
622.01 Boundary Layer Climatology
Theory of exchanges of energy and mass at the Earth-atmosphere
interface as it relates to microclimates with particular emphasis upon
radiation and climate.
Wu Qtr. 5 cr. Prereq: 520 or Atmo Sc 200 or permission of instructor, and
Physics 132.
622.02 Microclimatological Measurements
Practical experience in the fabrication of instruments, deployment of
measurement systems in the field, and recording of data related to
microclimates.
Sp Qtr. 3 cl., 1-3 hr lab. Prereq: 622.01.
623 Synoptic Meteorology U G 5
The theory and practice of weather forecasting.
623.01 Synoptic Analysis and Forecasting
Theory and practice in synoptic weather analysis and forecasting.
Wu Qtr. 5 cr. Prereq: 520 or Atmo Sc 230 or Physics 203, and Atmo Sc
620 or Geog 620; and preq or concur: Physics 132. Not open to
students with credit for 623.
623.02 Severe Storm Forecasting by Radar and Satellite
The theory and application of radar and satellite imagery in weather
forecasting, emphasis on severe thunderstorms, tornadoes, and
hurricanes; analysis of their evolution and structure.
Sp Qtr. 2-3 hr cr. Prereq: 623 or 623.01.
630 Conservation of Natural Resources U G 5
Philosophy of resource use; appraisal of resource base; costs of resource
development and conservation; resource perception, utilization, and
alternatives.
Wu Qtr. 2 1/2 hr cr.
640 Economic Geography U G 5
A substantive and theoretical introduction to topics in economic geography.
Au Qtr. 2 2 hr cr.
642 Geography of Development U G 5
Spatial aspects of economic development; spatial analysis of traditional
economics, industrial regions, transport linkages, and migration patterns
in developing countries.
Sp Qtr. 3 cl.
643 Comparative Development in the Newly Industrialized
Countries U G 5
Comparative analysis of newly industrializing countries from the perspective
of economic development and social change.
Wu Qtr. 2 2 hr cr.
645 Geography of Transportation U G 5
Relation between transportation and spatial organization; selected
analytical models dealing with traffic demand, network configuration, and
allocation of transport facilities; application to selected problems.
Au, Wu Qtr. 3 cl.
647 Locational Analysis U G 5
Historical review of major location theories and evaluation of application of
such theories to geographic problems.
Wu Qtr. 3 cl.
650 Urban Geography U G 5
Origin and growth of cities; structure and function of urban centers, their
areal expansion, and intertrade center relations, each examined in relation to
city planning.
Au, Wu, Sp Qtrs. 3 cl.
655 Theory and Methods of Regional Analysis U G 5
Issues addressed focus on regional economic systems, and include
regional definition and identification, measurement and classification,
quantification in regional analysis, regional economic data and modeling.
Sp Qtr. 2 1/2 hr cr. Prereq: 240 or permission of instructor.
660 Urban Political Geography U G 5
The changing politics of space in cities: class, neighborhood, and workplace
in the industrial and the post-industrial city.
Wu Qtr. 2 2 hr cr. Prereq: 460.
670 Population Geography U G 5
Analysis of population distributions, locational arrangements of growth,
densities, and migration flows; spatial relationships between population
variables and social, economic, and environmental factors.
Wu Qtr. 3 cl. Prereq: 240.
680 Numerical Cartography U G 5
An examination of the theory and methods of machine-oriented numerical
cartography.
Wu Qtr. 2 2-hr cr. Prereq: 580 and Math 150; or equivs.
H783 Honors Research U 3-5
A program of individual study arranged for students enrolled in the honors program with individual conferences and reports; requires presentation and oral defense of an honors thesis.
Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the required courses taken and an average of at least B in the remainder; written permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. At least 2 qtrs are required of candidates for the degree B.A. with distinction in geog. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded S/U.

785 Data Input Operations in GIS/Cartography U 5
Examination of instrumentation and methods by which digital spatial databases are created for subsequent use in cartography and geographic information systems.
Au Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 560, 665, and 857; or permission of instructor.

787 Advanced Applications in Geographic Information Systems U G 5
Examination of selected problems relating to the application of geographic information system technology to various topical areas; the topic varies each term. This course offers a foundation for related topics. Topics may include climatology, urban geography, and biogeography.
Au Qtrs. 2 3-hr cl. Prereq: 685 and 687, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

795 Seminar in Geography U G 5
Introduction to research procedures, problem formulation, and application of research techniques in geography.
Au, Wi, Sp Qtrs. 2 2-hr cl. Repeatable to a maximum of 20 cr hrs.

800 Seminars in Regional Geography G 3-5
The development of theory in regional development and its application to selected problems. Each decimal subdivision repeatable to a maximum of 20 cr hrs.
800.01 Theory of Regional Development Wi Qtr. 2 cl.
800.02 Problems in Regional Development Sp Qtr. 2 cl.

820 Seminars in Physical Geography G 3-5
Au, Wi, Sp Qtrs. 2 cl. Each decimal subdivision repeatable to a maximum of 20 cr hrs.
820.01 Problems in Climatology
820.03 Special Problems

821 Dynamic Climatology G 5
Dynamics, thermodynamics, energy conservation, flows, conversion processes; large-scale circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather processes; regional climates.
Wi Qtr. 2 2-hr cl. Prereq: 622.01 or permission of instructor.

822 Microclimatology G 5
Radiation and turbulence processes, conduction; variation in wind, temperature, humidity, soil moisture, evaporation, soil temperature; influence of vegetation and artificial structures.
Sp Qtr. 2 2-hr cl. Prereq: 620 or 622.01 or permission of instructor.

823 Applied Climatology G 5
Analysis of climatic and environmental change on various time scales; human impact on climate; theory and application of long-range and climate forecasting.
Sp Qtr. 2 2-hr cl. Prereq: 523.01 or permission of instructor.

840 Seminars in Location Analysis G 3-5
The development of theory in location analysis and its application to selected problems. Each decimal subdivision repeatable to a maximum of 20 cr hrs.
840.01 Location Theory
Au, Wi, Sp Qtrs. 2 cl.
840.02 Problems
Au, Wi, Sp Qtrs. 2 cl.
840.03 Approaches and Issues in Economic Geography
Current issues and problems in economic geography.
Su Qtr. 2 2-hr cl. Prereq: 640 or permission of instructor.

845 Seminars in Transportation Geography G 3-5
The development of theory in transportation geography and its application to selected problems.
Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 30 cr hrs.
845.01 Theory of Transportation Geography

850 Seminars in Urban Geography G 3-5
The development of theory in urban geography and its application to selected problems.
Au, Wi, Sp Qtrs. 2 cl. Each decimal subdivision repeatable to a maximum of 10 cr hrs.
850.01 Spatial Organization of the City
Intra-urban analysis, density and land use gradients, residential differentiation, neighborhood and community, and the urban development process. Repeatable to a maximum of 15 cr hrs.

850.02 Urban Systems Analysis
Inter-urban analysis; theory of the evolution of urban systems, structural characteristics of sets of cities, recent processes of change, notably deconcentration.

850.03 Third World Urbanization
Examination of role of cities in development processes and their characteristics, historical evolution, related policies, and other aspects such as migration, innovation diffusion, and labor markets.

855 Regional Input-Output Modeling and Extensions G 5
Advanced analysis of regional economic systems; foundations and extensions, data organization, assumptions and limitations of input-output modeling; extensions include SAMs, forecasting and CGE models.
Au Qtr. 2 2-hr cl. Prereq: 655 or permission of instructor.

860 Seminars in Political Geography G 3-5
The development of theory in political geography and its application to selected problems.
Sp Qtr. Prereq: 660 or permission of instructor. Each decimal subdivision repeatable to a maximum of 30 cr hrs.
860.01 Theory of Political Geography
860.02 Problems in Political Geography

870 Seminars in Population and Social Geography G 3-5
The development of theory in population and social geography and its application to selected problems.
Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 30 cr hrs.
870.01 Theory of Population and Social Geography
870.02 Problems in Population and Social Geography

880 Seminars in Cartography G 3-5
Readings and research in cartography.
Au Qtr. Prereq: 780 or written permission of instructor. Repeatable to a maximum of 20 cr hrs.

882 Development of Geographic Thought G 4
The evolution of concepts concerning the nature, scope, and methodology of geography: present focus and trends as reflected in current literature.
Sp Qtr. 3 cl.

883 Application of Quantitative Methods in Geography G 4
Application of quantitative methods to geographic problems; spatial statistics, ground sampling, maps of residuals, regionalization methods, and simulation maps.
Wi, Sp Qtrs. 2 cl, 2 lab hrs. Prereq: Course in introductory statistics and permission of instructor. Decimal subdivisions to be taken in sequence.
883.01 Applications I
883.02 Applications II

889 Seminars in Geography G 1
Topics to be announced each quarter.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

Atmospheric Sciences Seminar
See Atmos Sc 881.

896 Interdepartmental Seminar in Polar and Alpine Studies G 1-3
A seminar on selected topics involving anthropology, biology, climatology, exploration, geology, glaciology, microbiology, and soils.
Sp Qtr. 1-3 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. Given cooperatively by Byrd Polar Research Center, the College of Biological Sciences, and the departments of Geography, Geographical Sciences, and Plant Biology.

899 Interdepartmental Seminars G 1-5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced each quarter.

983 Special Topics in Quantitative Geography G 5
Application of advanced mathematical and statistical models to problems in geographical analysis.
Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: 883.01 and 883.02. Repeatable to a maximum of 15 cr hrs.
212* Common Minerals and Rocks U 3
A study of the common minerals and rocks, their associations, occurrences, identifying properties, and origin. Elliot.
Sp Qtr. 3 2-hr labs. Prereq: 121 and Chem 121. Not open to students with credit for 223.

H220 Contemporary Topics in Geological Sciences U 5
Geological processes and their underlying principles; diverse issues of current interest; modern investigative techniques introduced in laboratory.
Sp Qtr. 2 cl, 1.5-hr lab, 1.5-hr rec/disc, 1 4-day field trip, 2 3-4-hr field trips. Prereq: Introductory geological sciences; honors student or permission of instructor.

221 Introductory Mineralogy and Crystallography U 5
Internal and external symmetry of minerals; relationship of physical properties to crystal structure; introduction to elements of optical mineralogy; slight identification of about 80 minerals. Downs and Tuttonhorst.
Au Qtr. 3 cl, 2 2-hr labs. Prereq: Chem 121. Not open to students with credit for 414.

222 Introductory Optical Mineralogy U 5
Elements of optical mineralogy; mineral properties in plane and cross-polarized light; mineral identification in hand specimen and thin-sections; crystal chemistry of rock-forming minerals. Downs.
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 221.

223 Introductory Petrology U 5
Origin, occurrence, association, and mineral composition of the common rocks; laboratory includes work by megascopic and microscopic methods. Barten and Elliot.
Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 121 and 221. Not open to students with credit for 212.

245 Computational Geology U 5
Computer-oriented introduction to data analysis in the geosciences; topics include dimensional analysis and simulation, error analysis, geostatistics, sampling, linear regression, and covariance modeling. von Frese.
Wi Qtr. 4 cl, 1.5-hr lab. Prereq: Math 152, or written permission of instructor. GEC data analysis course.

280 Geophysical Principles U 5
Introduction to methods, practices and physical principles of geophysics including wave propagation, static fields, and the concept of space-time relationships; geologic interpretation of data. Daniels and Nollmiser.
Au, Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 121, Math 151, and Physics 131.

293 Individual Studies U 1-3
Special problems in the geological sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded SU.

294 Group Studies U 1-5
Group study of special topics in various fields of the geological sciences.
Su, Au, Wi, Sp Qtrs. H294 (honors) may be available to students enrolled in an honors program or by permission of department. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

414 Crystallography U 3
Periodicity and symmetry in crystalline materials, coordinate systems and lattices, crystallographic notation and calculations, group concepts, graphical methods, and selected applications. Tettenhorst.
Au Qtr. 2 cl, 1 2-hr lab. Prereq: Math 153. Not open to students with credit for 214.

H451 Science in the Courtroom U 5
Analysis of hydrologic, geologic, and chemical data from an infamous Superfund site as presented by expert witnesses in a famous trial. Bair.
Sp Qtr. 3 cl, 1 3-hr lab. Prereq: 121, Chem 122; and Math 152; or permission of Instructor. GEC phys sci course.

502 Stratigraphy and Sedimentation U G 5
Principles of, and procedures in, stratigraphy and sedimentation, illustrated by field and laboratory studies of sedimentary rocks. Aussen, Babcock, and Kriseke.
Au, Sp Qtr. 4 cl, 1 2-hr lab, and weekend field trips. Prereq: 223.

530 Structural Geology U G 5
An introduction to the principles of rock deformation, the classification and physical origin of rock structures, and crustal tectonic processes. Wilson.
Sp Qtr. 3 cl, 2 2-hr labs, 1 3-to-4 day field trip. Prereq: 121 and Physics 131.

550 Geomorphology U G 5
Detailed study of processes that shape the land surface and the forms produced under diverse climates. McKenzie.
Sp Qtr. 4 cl, 1 2-hr lab, field trips. Prereq: 122 and Chem 122, or permission of instructor.
580 Field Work and Laboratory Work in Earth Science U G 5
Essentials of field and laboratory observation, mapping, and data accumulation in the solution of earth-science problems. McKenzie and Pride.
Su Qtr. Prereq: 30 qtr hrs in geol sci, geog, astron, or meteor, with a minimum of 15 qtr hrs in geol sci and permission of instructor; Geol Sci 201, 212, and 550 recommended. Repeatable to a maximum of 10 or hrs. May not be used to satisfy BS degree requirements in geol sci.

581 Field Geology I U G 5
Concentrated training in the basic essentials of field observation and mapping; the work is done in central Utah, with headquarters in Ephraim, Elliot, Noltner, Pride, and Wilson.
Su (1st term) Qtr. Requires full time of student. Prereq: 223, 530, and written permission of instructor.

582 Field Geology II U G 4
Continuation of 581.
Su (2nd term) Qtr. Requires full time of student. Prereq: 581.

583 Field Geology for Science Teachers U G 3
Application of geological principles and interpretation of earth features in such selected areas as the Appalachian Mountain system, the Bahamas, Lake Erie, etc. Ausich, McKenzie, and Pride.
Wi, Sp Qtrts. 5-10 days between Au and Wi or Wi and Sp Qtrts; pre-trip meetings and post-trip meetings and reports. Prereq: 100 or equiv and permission of instructor. Intended primarily for in-service and pre-service teachers and education majors. May not be used to satisfy BS degree requirements in geol sci. Repeatable to a maximum of 6 or hrs.

584 Principles of Oceanography for Science Teachers U G 3
Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance. Krissak.
Su Qtr. 1 week. Prereq: 30 qtr hrs in physical sciences or biological sciences and permission of instructor. Intended for in-service teachers and education majors. May not be used to satisfy BS, MS, or PhD requirements in geol sci. Not open to students with credit for 107 or 206.

Antarctic Marine Ecology and Policy
See EEOB/Int Stds/Nat Res/597.02.

600 Sedimentation and Sedimentary Rocks U G 5
Source, dispersal, and accumulation of sediments; the interpretation of the environmental distribution of sedimentary rocks. Krissak.
Au Qtr. 4 1-hr cl, 1 2-hr lab arr. Prereq: 502.

601 Sedimentary Petrology U G 5
Identification and interpretation of sedimentary rocks based on mineralogic and textural study of thin sections and hand specimens. Ausich and Krissak.
Prereq: 600 or permission of instructor.

601.01 Sedimentary Petrology of Sandstones
Wi Qtr. 3 cl, 2 2-hr labs.

601.02 Sedimentary Petrology of Carbonate Rocks and Shales
Sp Qtr. 3 cl, 2 2-hr labs.

602 Carbonate Depositional Systems
602.01 Carbonate Depositional Systems I U G 3
The study of carbonate deposits in modern settings including the origin, composition, and identification of constituents and cement, and depositional environments. Ausich.
Wi Qtr. 2 cl, 1 2-hr lab. Prereq: 502 or 600, or equiv.

602.02 Carbonate Depositional Systems II U G 2
The field study of carbonates in a modern setting such as the Bahamas or southern Florida. Ausich.
Sp Qtr. 7-day field trip preceding the qtr. Prereq: 602.01 and permission of instructor.

603 Stratigraphy U G 5
Advanced study of the principles and procedures of stratigraphic nomenclature, subdivision, correlation, and interpretation, with examples from the international stratigraphic record. Ausich and Bergstrom.
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 502.

604 Sequence Stratigraphy U G 5
Advanced study of the principles and practice of sequence stratigraphy; cyclicity in the stratigraphic record; computer modeling of sedimentary systems; and reservoir characterization. Babcock.
Au, Sp Qtrts. 4 cl, 1 2-hr lab, field trips. Prereq: 502 or equiv.
628* Environmental Isotope Geochemistry U G 5
Use of natural and anthropogenic radioactivity and of natural variations in the isotope compositions of selected elements to study geochemical processes on the Earth's surface. Faure.
Wi Qtr. 5 cl. Prereq: 621.

629 Petrologic Phase Equilibria U G 5
Application of phase equilibrium diagrams to problems of igneous and metamorphic petrology. Barton and Noltlimer.
Au Qtr. 5 cl. Prereq: Sr standing in geol sci or related fields, or permission of instructor.

635* Advanced Crystallography U G 4
Point isometries, derivation of crystallographic point groups, space-lattice types, and crystallographic space-group types; crystallographic calculations emphasizing the metric matrix and changes of basis. Downs.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: 221 or 414 or equiv.

636 Advanced Mineralogy U G 4
Crystallography and crystal chemistry of the rock-forming silicate minerals.
Downs.
Au Qtr. 3 cl, 1-2 hr lab. Prereq: 221 or 414 or equiv.

637 X-Ray Diffraction U G 3
Emphasis on diffraction by crystalline powders; factors affecting the position and intensity of diffraction maxima; applications include qualitative and quantitative analysis. Tettenhorst.
Wi Qtr. 2 cl, 1-2 hr lab. Prereq: 414 or permission of instructor.

639* Clay Mineralogy U G 3
Relationship of structures and chemical composition of clay minerals to properties, origin, occurrence, and applications; evaluation of X-ray, differential thermal, infrared, and electron microscope data. Tettenhorst.
Sp Qtr. 3 cl. Prereq: 637 or permission of instructor.

641 Geostatistics Laboratory U G 2
Computer-oriented application of statistical methods to geodata analysis; topics include error analysis, applied geodata probability and statistics, sampling, least squares, and linear regression. von Frese.
Wi Qtr. 2 cl. Prereq: Stat 528, prerequisite or concur: Stat 529, or written permission of instructor.

642 Geomathematical Methods U G 4
Computer-oriented application of numerical methods to geodata analysis; topics include dimensional analysis, similarity, geodata modeling, profile and trend analysis, multivariable geostatistics, and graphics. von Frese.
Sp Qtr. 4 cl. Prereq: 641 and Math 153, or written permission of instructor.

644* Geotectonic Evolution of the Continents U G 5
Wi Qtr. 5 cl. Prereq: 229, 502, and 530; or written permission of instructor.

645 Advanced Structural Geology U G 5
Mechanisms of deformation; dynamic and kinematic analysis of rock structures; field and laboratory methods of structural analysis. Wilson.
Sp Qtr. 4 cl, 1-2 hr lab, 1-4 day field trip. Prereq: 530.

646 Geodynamics U G 5
Application of mathematical and physical methods to the solution of geologic problems in heat flow, plate tectonics, mountain building, groundwater flow, and river mechanics. Whillans.
Au Qtr. 5 cl. Prereq: 530 and written permission of instructor.

650 Glacial and Pleistocene Geology U G 5
The features produced by glaciers, present and past, and the history of glaciation during the Pleistocene. Whillans.
Sp Qtr. 5 cl, field trips. Prereq: 550.

651 Hydrogeology U G 5
Hydrologic and hydrogeologic factors controlling the occurrence, movement, storage, and chemical quality of ground water; exploration, evaluation, development, and management of ground-water resources. Bair.
Au Qtr. 4 cl, 1-2 hr lab, 1 all-day field trip. Prereq: 121 and Math 153.

652 Hydrogeologic Field Studies U G 5
Field study of various hydrogeologic terranes incorporating the use of hydraulic field equipment and testing procedures. Bair.
Sp Qtr. 3 cl, 3-1/2 day field trips, 3-3/2 day field trips. Prereq: 651.

660 Geology of Mineral Deposits U G 5
660.01 Geology of Nonmetallic Mineral Deposits
The occurrence, origin, distribution, properties, and uses of the nonmetallic minerals, Pride.
Au Qtr. 4 cl, 1-2 hr lab. Prereq: 223.

660.02 Geology of Nonmetallic Mineral Deposits
The occurrence, origin, distribution, properties, and uses of the nonmetallic minerals. Elliot and Pride.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: 223.

670 General and Economic Geology of Selected Areas U G 3 or 5
Concentrated field study of the stratigraphy, structural geology, tectonics, petrology, and geomorphology of a selected region, with special attention to the economic utilization of earth materials. Elliot, McKenzie, Pride, and Wilson.
Au Qtr. 5 or 10-day field trip preceding the qtr. Post-trip readings and report required. Prereq: 502, 530, and 550; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

675 Scanning Electron Microscopy and X-Ray Microanalysis U G 2
Theory of operation and hands-on training in the use of the scanning electron microscope and X-ray microanalyzer. Students use their own samples in lab.
Au, Sp Qtrs. 1 cl, 1-2 hr lab arr. Prereq: Written permission of instructor. This course is graded S/U.

680 Earth Physics U G 5
Physics of the solid Earth: the internal structure, density, seismic velocities, gravity and geomagnetic fields; thermal history and surface heat flux, mantle convection, crustal evolution and tectonic models of the crust and lithosphere. Noltlimer.
Au Qtr. 4 cl, 1-2 hr lab. Prereq: 530, Math 153, and Physics 133.

681 Geophysical Exploration: Gravity and Magnetics U G 3
Gravity and magnetic exploration principles applied to subsurface investigations; field exercises involve computer processing of data collected using professional instruments. Noltlimer and von Frese.
Sp Qtr. 2 cl, 1-2 hr lab, field trip. Prereq: Math 153 and Physics 133, or permission of instructor.

686 Environmental Geophysics U G 5
Principles and applications of geophysical techniques to environmental and site characterization in the shallow subsurface. Daniels.
Sp Qtr. 4 cl, 1-2 hr lab. Prereq: 121, Math 151, and Physics 131.

687 Exploration Geophysics U G 5
Geophysical practices in exploration; seismology and methods in sedimentary rocks; electrical methods in crystalline rocks; remote-sensing and potential-field methods in regional analysis. Daniels.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: 121, Math 151, and Physics 131.

693 Individual Studies U G 1-5
Special problems in any branch of the geological sciences for which the student has the proper qualifications.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 45 hrs in any combination of decimal subdivisions. These courses are graded S/U.

693.01 Economic Geology
693.02 Engineering Geology
693.03 Extraterrestrial Studies
693.04 Field Geology
693.05 Geochemistry
693.06 Geomorphology
693.07 Geophysics
693.08 Glaciology and Glacial Geology
693.09 History of the Geological Sciences
693.10 Hydrogeology
693.11 Marine Geology, Limnology, and Oceanography
693.12 Paleontology
693.13 Petrology and Petrography
693.14 Photogeology
693.15 Sedimentation
693.16 Stratigraphy
693.17 Structural Geology
693.18 Earth Science Education
693.19 Unspecified
693.20 Thermochronological Geology
693.21 Crystallographical Geology
693.22 X-Ray Mineralogy
693.23 Clay Mineralogy
693.24 Physical Properties of Crystals

694 Group Studies U G 1-5
Group study of special topics in various fields of the geological sciences.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
703* Principles of Biostratigraphy U G 3
Principles of zonal and azonal biostratigraphy; definition, identification, and correlation of standard biostratigraphic units; quantitative development of chronostatigraphically significant zonal frameworks. Ausich, Babcock, Bergstrom, and Webb.
Sp Qtr. 3 cl. Prereq: 201 or 613 or 614,* and 603 or equiv; or written permission of instructor.

713* Taxonomy and Phylogeny in the Fossil Record U G 3
Theory and practice of taxonomy and phylogenetic reconstruction as applied to organisms in the fossil record. Ausich and Babcock.
Au Qtr. 3 cl. Prereq: 614 or permission of instructor.

714* Biometry U G 3
Biometric principles and methods as applied to the solution of taxonomic, ontogenetic, and evolutionary problems in the fossil record. Ausich and Babcock.
Au Qtr. 3 cl. Prereq: 614 and 641 or equiv; or permission of instructor.

717* Containment and Remediation of Contaminants in Ground Water U G 5
Examination of approaches to contain and/or remediate contaminants in ground water, including site assessments, design approaches, and case studies. Schwartz.
Sp Qtr. 3 cl, 2 labs. Prereq: 651; 752 recommended.

718 Geochemistry of Natural Waters U G 5
Examination of the processes that control chemical equilibria in natural waters: acid-base reactions, metal complexation/speciation, and oxidation-reduction processes. Chin.
Sp Qtr. 4 cl, 1 rec. Prereq: Chem 122 and Math 152; or equivs.

719 Environmental Organic Geochemistry U G 5
Au Qtr. 5 cl. Prereq: 718, and Chem 520 or permission of instructor. Intended for students in geol sci, civil en, and the grad environmental sci program.

720* Noble Gas Geochemistry U G 4
Application of noble gas, K-Ar, and Ar**Ar research methods to geological and geochronological problems. Poland.
Sp Qtr. 4 cl. Prereq: 620 or equiv, or written permission of instructor.

725* Isotope Geochemistry of Igneous and Metamorphic Systems U G 4
Advanced study of the principles, methods, and applications of isotope geochemistry to igneous and metamorphic processes and the origin and evolution of Earth. Poland.
Sp Qtr. 4 cl. Prereq: 620 or equiv or written permission of instructor, 625 recommended.

737* Crystal Structure Analysis U G 4
Theory and practice of single crystal X-ray and elastic neutron diffraction, including four-circle diffractometry, profile analysis, data reduction, and least-squares structure refinement. Downe.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: Math 153 and Physics 113 or 133; or equivs.

745* Rheological Properties of Rocks U G 3
Principles of rock rheology and empirical studies of brittle and ductile deformation mechanisms, with special reference to applications to crustal and mantle problems. Whillans and Wilson.
Sp Qtr. 3 cl. Prereq: S30.

751* Quantitative Ground-Water Flow Modeling U G 5
Principles of analytical and numerical techniques in modeling ground-water flow in porous media, development of two- and three-dimensional steady-state and transient flow codes. Bair.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: 651.

752 Contaminant Hydrogeology U G 5
 Fate and transport of contaminants in the subsurface; methods used to characterize, evaluate, and remediate sites contaminated by hazardous wastes and pollutants. Schwartz.
Wi Qtr. 4 cl, 1-2 hr lab, 2 all-day field trips. Prereq: 651.

754 Ground-Water Risk Assessment U G 5
Quantitative risk assessment for contaminant migration in ground-water by applying numerical modeling approaches. Ibeski.
Sp Qtr. 2-2 hr cl, 1-2 hr lab. Prereq: 651 or equiv.

779* Physical Properties of Minerals and Rocks U G 3
Quantitative survey of electrical, magnetic, elastic, inelastic, radioactive, thermal, density, and seismic properties and chemical compositions of rocks and minerals. Nolttner.
Wi Qtr. 3 cl. Prereq: 221, 600, and 617; or equivs; or written permission of instructor.

781* Gravimetry U G 3
Au Qtr. 3 cl. Prereq: 681 or written permission of instructor. Not open to students with credit for 643.

782* Magnetometry U G 3
Advanced magnetic theory and practice applied to investigations of the subsurface, including interpretation of surface, airborne, and satellite magnetic measurements. von Frese.
Au Qtr. 3 cl. Prereq: 681 or written permission of instructor.

783* Honors Research U 3-5
A program of individual study arranged for students enrolled in the honors program, with individual conferences and recuits; requires presentation and oral defense of an honors thesis.
S, Au, Wi, Sp Qtrns. Prereq: 4th yr standing with a grade of A in at least half of the geo sci courses taken and an average of at least B on the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA or BS with distinction in geol sci. Failure to receive the mark of S in this course is a disqualification for departmental honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

784* Paleomagnetism U G 3
Physical and mineralogical basis for permanent magnetization in rocks, physical basis of measurement, geological basis for sampling, and geological constraints on interpretation of results. Nolttner.
Sp Qtr. 3 cl. Prereq: 680 or equiv or written permission of instructor.

800 Seminar in Stratigraphy G 3
Consideration of current and classical problems and procedures in biostratigraphic and lithostratigraphic analysis and synthesis. Ausich, Bergstrom, and Krissek.
Wi Qtr. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

801 Seminar in Sedimentation and Sedimentary Rocks G 3
Consideration of sedimentation, and the structures, depositional environments, and paleontologic interpretation of sedimentary rocks. Ausich and Krissek.
Sp Qtr. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

810 Seminar in Paleobiology G 3
Advanced topics in paleozoological and paleobringic morphology, taxonomy, and procedure; current questions in biostratigraphy, paleoecology, and evolutionary development of fossil flora and fauna. Ausich, Babcock, Bergstrom, and Webb.
Sp Qtr. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

821 Seminar in Isotope Geology and Geochemistry G 3
Discussion of selected topics in isotope geology, geochronology, geochemistry, and cosmochemistry. Faure and Poland.
Sp Qtr. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

822 Seminar in Petrology and Optical Mineralogy G 3
Selected topics in optical mineralogy and igneous, sedimentary, and metamorphic petrology. Barton, Downs, Elliot, and Nolttner.
Wi Qtr. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

840 Seminar in Structural Geology G 3
Selected topics in structural geology, rock deformation, and geotectonics. Wilson.
Au Qtr. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

850 Seminar in Geomorphology and Quaternary Geology G 3
Current and classical problems in geomorphology and Quaternary geology, such as desert and coastal geomorphology, submarine topography, periglacial and karst morphology, volcanology, and Quaternary geomorphology. McKenzie, Thompson, and Williams.
Au, Wi Qtrns. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

851 Seminar in Hydrogeology and Oceanography G 3
Topics in hydrogeology and oceanography, such as ground-water hydrology and hydrodynamics, basin management, reef and atoll development, or paleo-oceanography. Bair, Chir, Krissek, and Schwartz.
Wi Qtr. 2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.
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102.01 Classroom Track U 5
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 100.02, or 101.01, or 5 cr hrs in 101.51 or 101.02. Also open to students with a maximum of two years of high German and a placement test score from 11-21. This course is available for EM credit.

102.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Prereq: 100.02, or grade of B- or above in 101.01, or 5 cr hrs in 101.02 or 101.51, or permission of instructor. Also open to students with a maximum of two years of high German and a placement test score from 11-21. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the cr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs in 102.02.

102.66 Intensive German for Review I U 5
Review of basic structures, vocabulary, and skills needed for entry into German 103.01.
Au, Sp Qtrs. 5 1/2-hr cl. Prereq: 2 or more years of high school German and placement test score of 0-10. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit for 101.51, 102.51, 102.52. Students who test into 102.66 during W or Sp Qtr may audit 101.01.

103 Intermediate German I
Reading; oral and written practice; grammar review; students may select from among the following subdivisions which emphasize specific skills and subject matter.
Su, Au, Wi, Sp Qtrs. (Not all decimal subdivisions offered every qtr) 5 cl. Prereq: 102.01, or 5 cr hrs in 102.51, or 102.02, 102.68, or 110.01, or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.01 Basic U 5
Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing.
H103.01 (Honors) may be available to students in an honors program or by permission of instructor. Prereq for H103.01: 102.01 with a grade of A or permission of instructor. Not open to students with credit for 103. This course is available for EM credit.

103.051 Science U 5
Introductory readings in scientific German.
Not open to students with credit for 103 or 113.

103.51 Individualized Track U 1-5
Au, Wi, Sp Qtrs. Prereq: 102.01, or 5 cr hrs in 102.51, or 110, or equiv. Not open to students with credit for any decimal subdivision of 103. Students register for and complete from 1 to 5 cr hrs during the cr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

103.66 Intensive German for Review II U 5
Intensive review of basic structures, vocabulary and skills needed for entry into German 104.
Au, Wi, Sp Qtrs. 5 1 1/2-hr cl. Prereq: 101.01 or 5 cr hrs in 101.51, or 3 or more yrs of high school German and placement into 102 by placement exam. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit for German 102.01, 102.51, 102R, 103.01, 103.51. Students who test into 103.66 during Sp Qtr may audit 102.01.

104 Intermediate German II U 5
Reading; oral and written practice; vocabulary building; students may select from among the following subdivisions which emphasize specific skills and subject matter.
Su, Au, Wi, Sp Qtrs. (Not all decimal subdivisions offered every qtr) 5 cl. Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

104.01 Basic
Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing.
H104.01 (Honors) may be available to students in an honors program or by permission of instructor. Prereq for H104.01: H103.01 or 103.01 with a grade of A or permission of instructor. Not open to students with credit for 104. This course is available for EM credit.

104.021 Conversation
Emphasis on speaking and aural comprehension.
Not open to students with credit for 104.

104.031 Readings in the Humanities
Emphasis on readings in German literature, cultural history, and contemporary life.
Not open to students with credit for 104.

104.051 Science
Advanced readings in scientific German.
Not open to students with credit for 104 or 114.

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102.01 Classroom Track U 5
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 100.02, or 101.01, or 5 cr hrs in 101.51 or 101.02. Also open to students with a maximum of two years of high German and a placement test score from 11-21. This course is available for EM credit.

102.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Prereq: 100.02, or grade of B- or above in 101.01, or 5 cr hrs in 101.02 or 101.51, or permission of instructor. Also open to students with a maximum of two years of high German and a placement test score from 11-21. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the cr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs in 102.02.

102.66 Intensive German for Review I U 5
Review of basic structures, vocabulary, and skills needed for entry into German 103.01.
Au, Sp Qtrs. 5 1/2-hr cl. Prereq: 2 or more years of high school German and placement test score of 0-10. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit for 101.51, 102.51, 102.52. Students who test into 102.66 during W or Sp Qtr may audit 101.01.

103 Intermediate German I
Reading; oral and written practice; grammar review; students may select from among the following subdivisions which emphasize specific skills and subject matter.
Su, Au, Wi, Sp Qtrs. (Not all decimal subdivisions offered every qtr) 5 cl. Prereq: 102.01, or 5 cr hrs in 102.51, or 102.02, 102.68, or 110.01, or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.01 Basic U 5
Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing.
H103.01 (Honors) may be available to students in an honors program or by permission of instructor. Prereq for H103.01: 102.01 with a grade of A or permission of instructor. Not open to students with credit for 103. This course is available for EM credit.

103.051 Science U 5
Introductory readings in scientific German.
Not open to students with credit for 103 or 113.

103.51 Individualized Track U 1-5
Au, Wi, Sp Qtrs. Prereq: 102.01, or 5 cr hrs in 102.51, or 110, or equiv. Not open to students with credit for any decimal subdivision of 103. Students register for and complete from 1 to 5 cr hrs during the cr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

103.66 Intensive German for Review II U 5
Intensive review of basic structures, vocabulary and skills needed for entry into German 104.
Au, Wi, Sp Qtrs. 5 1 1/2-hr cl. Prereq: 101.01 or 5 cr hrs in 101.51, or 3 or more yrs of high school German and placement into 102 by placement exam. Not open to native speakers of German through regular enrollment or EM credit. Not open to students with credit for German 102.01, 102.51, 102R, 103.01, 103.51. Students who test into 103.66 during Sp Qtr may audit 102.01.

104 Intermediate German II U 5
Reading; oral and written practice; vocabulary building; students may select from among the following subdivisions which emphasize specific skills and subject matter.
Su, Au, Wi, Sp Qtrs. (Not all decimal subdivisions offered every qtr) 5 cl. Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

104.01 Basic
Balanced use of the basic language skills: reading, aural comprehension, speaking, and writing.
H104.01 (Honors) may be available to students in an honors program or by permission of instructor. Prereq for H104.01: H103.01 or 103.01 with a grade of A or permission of instructor. Not open to students with credit for 104. This course is available for EM credit.

104.021 Conversation
Emphasis on speaking and aural comprehension.
Not open to students with credit for 104.

104.031 Readings in the Humanities
Emphasis on readings in German literature, cultural history, and contemporary life.
Not open to students with credit for 104.

104.051 Science
Advanced readings in scientific German.
Not open to students with credit for 104 or 114.

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112 Intensive German U 5, 10, or 15
Elementary and intermediate German for students desiring comprehensive knowledge of German in the shortest possible time; students will devote their entire time to this course.
Su Qtr. Enrollment limited to 20 students. Prereq.: Permission of dept. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv. of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in German will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout enntire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC for lang course. Fl. Adams Conf.

115 Intermediate German U 10
Intensive 10-week summer course taught in Dresden, Germany, combining the skill development in 102 and 104 with the cultural experience of living abroad.
Su Qtr. 5–8 cr. Prereq.: 102 or 102.51. GEC for lang course.

162* Elementary-Intermediate German for Selected Students U 5
Wi Qtr. 5 cr. Prereq.: Grade of A in 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

163* Elementary-Intermediate German for Selected Students U 5
Continuation of 162.
Sp Qtr. 5 cr. Prereq.: 162. Not open to native speakers of this language through regular course enrollment or EM credit. Successful completion of the sequence 101-182-183 fulfills the Arts and Sciences foreign language requirement and provides eligibility for 200-level courses. GEC for lang course.

201 German Composition and Conversation U 5
Practice in basic written and spoken German; emphasis on study of word forms and sentence structure; themes and oral presentations on topics of everyday life.
Au, Wi, Sp Qtrs. 5 cr. Prereq.: 104 or equiv. Not open to students with credit for 204 or 208; or to native speakers of this language through regular course enrollment or EM credit. No audit.

202* Business German U 5
Development of business-related cultural knowledge and communication skills in German; introduction to the world of German business through audio, video, print media; four-skills course.
Wi Qtr. 3 1/2 hr cr. Prereq.: 201 or equiv, or permission of instructor. No audit.

203* Intermediate German Conversation U 3
Practice in spoken everyday idiomatic German, based on texts concerning German life today.
Wi, Sp, Qtrs. 3 cr. Prereq.: 104.52, any other 104 course, or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. No audit.

230 Introduction to German Prave U 5
Reading and discussion of German literary texts representing significant prose types, authors, and periods including fairy tale, fable, diary, short story, novel, essay, and novel.
Wi Qtr. 5 cr. Prereq.: 201 or equiv or permission of instructor.

231 Introduction to German Poetry U 5
Reading and discussion of selected German poetry, introducing major German poets and poetic forms; these include the folksong, ballad, sonnet, and rhytous and political poetry.
Au Qtr. 5 cr. Prereq.: 201 or equiv or permission of instructor.

232* Introduction to German Drama U 5
Reading and discussion of German dramatic texts, representing influential forms, authors, and traditions: folk comedy, classical tragedy, the tragico-comedy, the radio play, and documentary theatre.
Wi Qtr. 5 cr. Prereq.: 201 or equiv or permission of instructor.

260* German Literature U 5
Trends in German literature of the Middle Ages, the Renaissance and the Reformation as reflected in representative literary monuments.
3 1/2 hr cr. Prereq.: English 110 or 111 or equiv. Credit does not apply toward a major in German. Taught in English. GEC arts and hums lit courses.

260.01 Love, Death, and Folly in German Literature before 1700
Major works of German literature of the Middle Ages, the Renaissance, and the Baroque, in English translation.
Au Qtr. Not open to students with credit for 260.

260.02 The Family: German Literature after 1700
Major German literature, autobiographical texts from the 18th to the 20th centuries in English translation as well as films.
Sp Qtr.

260.03 Ethics and Institutions: Soldiers and Bureaucrats
Major works of modern German literature in English translation, with a theme by which significant developments in German culture can be measured and examined.
Wi Qtr.

261* German Classics in Translation U 3
Social and intellectual forces in Germany as reflected in German literature from the Enlightenment to the middle of the 19th century; masterpieces from Goethe to Gottfried Keller.
Wi Qtr. 3 cr. Credit does not apply toward a major in German. Taught in English.

262* Modern German Literature in Translation U 3
Intellectual forces and literary trends in German literature from the end of the 19th century to the present; masterpieces from Gerhart Hauptmann to Bertolt Brecht.
Sp Qtr. 3 cr. Credit does not apply toward a major in German. Taught in English.

H265 The Faust Theme U 5
Major versions of the Faust story, their socio-cultural context, and their symbolic expression of recurring human concerns.
Au Qtr. 2 1/2 hr cr. Prereq.: English 110 or 111 or equiv. Taught in English. GEC arts and hums lit course.

275 Development of Contemporary Germany: Dresden Yesterday and Today U 5
Introduction to German life and culture, past and present, including the new federal states; taught within summer study abroad program with students experiencing German culture first hand.
Su Qtr. 2 1/2 hr cr. Prereq.: 102 and concur 115. GEC arts and hums cultures and ideas course.

291 Early German Literature in Cultural Context U 5
Origins and highlights of German culture and life as reflected in literary and poetic works; Germanic mythology, religion, and the arts.
Sp Qtr. 5 cr. Not open to students with credit for 361. Taught in English. Supplemented by audio-visual aids. GEC arts and hums lit course.

292 Modern German Literature in Cultural Context U 5
Two hundred years of German literature, arts, philosophy, and social thought, as they reflect cultural and social life in German-speaking countries.
Au Qtr. 5 cr. Not open to students with credit for 362. Taught in English. Supplemented by audio-visual aids. GEC arts and hums lit course.

293 Individual Studies U 2-5
Individual investigation of minor problems in German language and literature.
Su, Wi, Sp Qtrs. Prereq.: Written permission of chairperson. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Group Studies U 2-5
Investigation of minor problems in German literature and language.
Au, Wi, Sp Qtrs. Prereq.: Written permission of chairperson. Repeatable to a maximum of 10 cr hrs.

2981 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq.: Permission of instructor. Repeatable for different titled study tours only.

298.01 Domestic
298.02 Foreign

299 Weimar and the Third Reich in German Literature and Film U 5
Culture of the Weimar Republic and Nazi Germany in literature, film, the other arts; the roots of fascism and its echoes in postwar Germany.
Au, Sp Qtrs. 2 2/ hr cr. Taught in English. GEC arts and hums cultures and ideas course.

301 Intermediate German Composition and Conversation U 5
Practice in written and spoken German; emphasis on semantics, topical area studies, word families; essays and oral presentations on topics of general interest and current concern.
Au, Wi, Sp Qtrs. 5 cr. Prereq.: 201 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. No audit.
302* Business German II U 5
Continued development of cultural knowledge and communication skills in German; study of business trends, traditions, and structures through audio, video, print texts; four-skills course.
Sp Qtr. 3 11/2-hr. cl. Prereq: 202 or equiv or permission of instructor. No audit.

303 The Practice of Translation U 3
German-English and English-German translation; texts from diverse areas; emphasis on improvement of German grammar, syntax, idiom, and style; discussion of common translation techniques.
Wi Qtr. 3 cl. Prereq: 201 or equiv or permission of instructor. No audit.

399 The Holocaust Experience in German Literature and Culture U 5
Literary texts and films reflecting the German Jewish literary tradition, German anti-Semitism, and the Holocaust; authors include Luther, Heine, Zweig, Celan, and Arendt.
Wi Qtr. 2 11/2-hr. cl. Taught in English. GEC arts and hums lit course.

409* Advanced German Conversation U 3
Practice in spoken German on topics of general interest and current events.
Au Qtr. 3 cl. Prereq: 301 or equiv or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

410 Advanced German Composition U 3
Writing and discussion of compositions, practical review of grammar in context, and practice in translation.
Au, Wi Qtr. 3 cl. Prereq: 301 or equiv or permission of instructor. Not open to students with credit for 620.

420* Studies in German Literature I (750-1700) U 5
Development of German literature in its historical, social, and philosophical context from earliest times to the Age of Enlightenment.
Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor. Taught in German.

421 Studies in German Literature II (1700-1870) U 5
Development of German literature in its historical, social, and philosophical context from the Age of Enlightenment to German unification.
Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor.

422* Studies in German Literature III (1870-Present) U 5
Development of German literature in its historical, social, and philosophical context from 1870 to the present.
Sp Qtr. 5 cl. Prereq: 201 or equiv, and one German literature course; or permission of instructor.

463 German Culture of the 19th and 20th Centuries U 5
Intellectual, artistic, and social trends in the German-speaking countries from 1815 to the present.
Sp Qtr. 5 cl. Prereq: 10 cr hrs beyond 104 of courses taught in German or permission of instructor. Taught in German.

499* National Reconstruction: Culture in the Postwar Germanies U 5
Presentation of a broad picture of cultural developments in the modern German states from the end of World War II to the present.
Sp Qtr. 2 2-hr. cl. Prereq: Sr standing.

540 Literature and Life in German-Speaking Countries U G 3
Discussion of significant literary and cultural developments reflecting aspects of life in German-speaking countries: Austria, Switzerland, and Germany; topic varies.
Au Qtr. 3 cl. Prereq: 201, 301, and one German literature course; or permission of instructor. Repeatable to a maximum of 9 cr hrs. GEC third writing course. Taught in German.

550* Current Events in German-Speaking Countries U G 3
Studies and intensive discussion of current cultural and social issues in the German-speaking world; newspaper readings, guest lectures, films, music, and student presentations; topic varies.
Sp Qtr. 3 cl. Prereq: 10 cr hrs of German at the 200 level and 301 or equiv, or permission of instructor. Repeatable to a maximum of 9 cr hrs. Taught in German.

560 Senior Seminar in German Literature U 5
Intensive study and discussion of selected important issues, themes, trends, or individual authors; topic varies.
Wi Qtr. 3 cl. Prereq: 201, 301, and one 400-level German literature course, or permission of instructor. Repeatable to a maximum of 9 cr hrs. Taught in German.

571 Basic German for Graduate Students G 5
The fundamentals of German grammar, as required for the reading of German texts in the sciences, social sciences, and humanities.
Su, Au Qtr. 5 cl. Prereq: Grad standing. Credit does not apply to the minimum hours required for the master’s or doctoral degrees. No audit.

572 German for Research I G 3
Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement.
Au, Wi, Sp Qtr. 3 cl. Prereq: Grade of C or above in 571 or equiv preparation demonstrated by a placement test. Open only to grad students. Credit does not apply to the minimum hours required for the master's or doctoral degrees. No audit. Repeatable twice.

573 German for Research II G 3
Reading of difficult material at a reasonable rate of speed and with only infrequent use of dictionaries. Completion of this course with a grade of A or B may be accepted by the student's dept as evidence of a thorough reading knowledge of German.
Au, Wi, Sp Qtr. 3 cl. Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test and permission of instructor. Open only to grad students. Credit does not apply to the minimum hours required for the master's or doctoral degrees. No audit. Repeatable twice.

General Prerequisites for Courses Numbered 600
Unless otherwise indicated, the prerequisites for all 600-level courses are: 201, 301, 410, and one German literature course at the 400 level (420, 421, 422). Exceptions may be allowed by instructors for students with special qualifications.

630 Introduction to Stylistics U G 5
Composition on assigned topics, intensive translation, and comparative study of usage designed to develop a sophisticated expository style in the writing of German.
Sp Qtr. 4 cl. Prereq: 410, or 301 and written permission of instructor.

635* Practical German Pronunciation U G 5
Standard German pronunciation; oral and written drill.
Wi Qtr. 2 2-hr. cl. Prereq: Permission of instructor.

641* Language and Society in Intervar Vienna U G 5
Intervar: Viennese social and political structure, language and literary expression, ethnicdiversity; arts and architecture; gender politics; transition of empire to republic; roots of Austro-fascism and anti-Semitism.
Au Qtr. 2 2-hr. cl. Prereq: Jr standing or permission of instructor. Not open to students with credit for Yiddish 641. Cross-listed in Yiddish.

660* Masterpieces of German Literature U G 5
Selections from works of major German writers; topic varies each year.
Su Qtr. 4 cl. Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr hrs.

671* German Cinema to 1945 U G 5
Development of film in Germany from late eighteenth century to end of WWII; fundamental elements of film and film analysis, film as an art form and other aspects of film.
Su Qtr. 2 3-hr. cl. Prereq: Jr standing or permission of instructor.

672 German Cinema from 1945 to the Present U G 5
Development of film in Germany from 1945 to period after reunification; fundamental elements of film and film analysis; developments in German film in light of cultural and historical frameworks.
Su Qtr. 2 3-hr. cl. Prereq: Jr standing or permission of instructor.

693 Individual Studies U G 2-5
Investigation of minor problems in the various fields of German literature and philology.
Au, Su, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded SU.

694 Group Studies U G 2-15
Investigation of minor problems in the various fields of German literature and philology.
Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

General Prerequisites for Courses Numbered 700
Prerequisites for 700-level courses are grad standing, or 4th yr standing with 10 cr hrs in German at the 600-level, and permission of chairperson.
701* Introduction to Bibliography and Research U G 3
The tools, problems, and methods of literary, philological, linguistic, electronic, and pedagogical research in Germanics; includes introduction to departmental profession, and professional writing skills.
Wi Qtr. 2 cl. Prereq: Grad standing or permission of instructor. This course is graded S/U.

702* Introduction to Literary Forms and Styles U G 5
History of literary genres, their textual forms, their theories; the terminology of genre, literary structures, and devices and practice in analysis of various texts.
Sp Qtr. 2 cl. Prereq: Grad standing or permission of instructor.

703 Introduction to Contemporary Critical Approaches to Literature U G 5
Primary current methodological and theoretical approaches to German literary study and brief consideration of their history; positivism, hermeneutics, formalism, Marxism, structuralism, post-structuralism. Qtr varies. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

705 Structure and Description of Modern Standard German U G 5
Phonological, morphological, and syntactic systems of modern German; lexical changes, non-standard varieties of the language; differences between East and West German usage.
Sp Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Taught in German.

706* Forms of Contemporary German Usage U G 5
Analytical and practical study of the ways in which German is written and spoken today (colloquial speech, business and scholarly German, etc.); emphasis on oral and written practice.
Sp Qtr. 4 cl. Prereq: Grad standing or permission of instructor or 409 and 410 or 630. Taught in German.

740 Development of German Narrative Prose U G 5
The novel, Novelle, short story, and other forms of German prose: historical overview, theory, and selected primary texts as illustration.
Sp Qtr. 4 cl. Prereq: Grad standing or equiv or permission of instructor.

741 Development of German Drama U G 5
History and theory of the drama in Germany; methods of drama analysis; interrelationship of drama, theatre, and audience; study of selected texts.
Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor.

742 Development of German Poetry U G 5
Elements of German poetry; close study of representative poets and poems since the Baroque.
Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor.

750* Periods of German Literary History: 800-1400 U G 5
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.
Wi Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

751 Periods of German Literary History: 1400-1700 U G 5
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.
Au Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

752 Periods of German Literary History: 1700-1850 U G 5
Study of major works chosen to present prominent themes and problems and/or important developments within the period; topic varies.
Wi Qtr. 4 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

753 Periods of German Literary History: 1850-Prent U G 5
Study of major works chosen to present prominent themes and problems within the period; topic varies.
Sp Qtr. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

777 Colloquium in German Literature U G 2-5
Selected topics, problems, and works in the various fields of German literature.
Au Qtr. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

H783 Honors Research U 3-5
Offers undergraduates with special aptitudes a greater opportunity for independent study than is possible in ordinary courses.
Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the German courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

790* Foundations of Contemporary Critical Theory U G 5
Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Chouli, and others.
Wi Qtr. 2 2-hr or 5 cl. Prereq: Jr or sr or grad standing. Cross-listed in Comparative Studies in the Humanities, English, French, Italian, and Spanish.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 or hrs with permission of instructor.

General Prerequisites for Courses Numbered 800
Prerequisites for 800-level courses are graduate standing and permission of chairperson.

801* Middle High German G 5
Intensive introduction to Middle High German; comprehension and application of grammatical principles; selected texts for linguistic analysis.
Wi Qtr. 4 cl.

802* Old Saxon and Old High German G 5
Analysis of the structure of Old High German and Old Saxon and dialect differences, manuscript tradition, textual criticism, literary-cultural importance of major works.
Sp Qtr. 4 cl.

803* Gothic G 5
Phonology and grammar of Gothic as a German dialect; selected passages from Wulfila's Bible; relationship of the Germanic languages to Old High German.
Sp Qtr. 4 cl.

806* History of the German Language G 5
Basic concepts of historical linguistics; the major factors of change in the history of German from Proto-Germanic to the present.
Au Qtr. 4 cl. Prereq: 801.

810* German Literary Criticism and Theory G 5
Historical overview and evaluation of critical methods; introduction to contemporary literary theories; the use-value of literary criticism.
Wi Qtr. 2 2-hr cl.

840 College Teaching of German G 5
Methods and techniques for teaching German at the college level.
Au Qtr. 4 cl. Prereq: Permission of instructor. Intended for grad students in German. Not open to students with credit for 700.

850 German Proseminar G 5
Selected topics in German literature, language, and culture; seminar discussion format with oral and written reports.
Su, Au, Wi, Sp Qtrs. 4 cl. Repeatable to a maximum of 20 or hrs.

890* Interdepartmental Studies in Critical Theory G 5
Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in literary theory.
Sp Qtr. 2 2-hr or 5 cl. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 cr hrs. Cross-listed in Comparative Studies in the Humanities, English, French, Spanish, and Women's Studies.

899* Interdepartmental Seminar G 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Sp Qtr. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs.

963 Graduate Student Teaching Apprenticeship G 5
Opportunity for advanced graduate students to plan and teach in conjunction with faculty member a course at 200 or higher level.
Au, Wi, Sp Qtrs. Arr. Prereq: A minimum of one year experience as GTA. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

960 Seminar in Modern German Literature: 1700 to the Present G 5
Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues; major research papers.
Au, Wi, Sp Qtrs. 1 3-hr cl. Repeatable to a maximum of 45 cr hrs.

970 Seminar in Older German Literature to 1700 G 5
Topics vary in focus and methodology; emphasis may range from individual authors, works, or themes to theoretical or interdisciplinary issues.
Au Qtr. 1 3-hr cl. Repeatable to a maximum of 45 cr hrs.
980 Seminar in Germanic Philology G 5
Topics from historical and comparative studies of older Germanic dialects; structure of New High German and contemporary German. Wi Qtr. 1-3 hr. Not open to students with credit for 870. Repeatable to a maximum of 45 cr. hrs.

993 Individual Studies G 1-5
With the approval of the department chairperson, doctoral students may register for individual study in areas normally not covered by courses. Su, Au, Wi, Sp Qtr. Prereq: Permission of chairperson. Repeatable to a maximum of 15 cr. hrs. This course is graded S/U.

998 Research in German: Thesis G Arr
Research for master's thesis. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr. hrs. This course is graded S/U.

999 Research in German: Dissertation G Arr
Research for dissertation purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Graduate School

247 University Hall, 230 North Oval Mall, 229-6031

501 Graduate Study and Academic Careers U 5
Exploration of graduate study and academic careers. Su Qtr. 1-4 hr. Open only to GRP students. This course is graded S/U.

594 Group Studies U 1-5
Su Qtr. Arr. Repeatable to a maximum of 15 cr. hrs. This course is graded S/U.

999 Research: Interdisciplinary G Arr
Interdisciplinary doctoral dissertation research approved by the Graduate School for one-of-a-kind programs.

Greek

414 University Hall, 230 North Oval Mall, 229-2744
See also Classics and Modern Greek.

101 Elementary Ancient Greek I U 5
Introduction to the language of the ancient Greek authors and the New Testament. Au Qtr. 5 cr. Not open to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang. course. FL Adminis Cond course.

102 Elementary Ancient Greek II U 5
Wi Qtr. 5 cr. Prereq: 101. This course is available for EM credit. GEC for lang. course. FL Adminis Cond course.

103 Intermediate Ancient Greek I U 5
Sp Qtr. 5 cr. Prereq: 102. This course is available for EM credit. GEC for lang. course.

104 Intermediate Ancient Greek II U 5
5 cr. Prereq: 103 or permission of instructor. This course is available for EM credit. GEC for lang. course.

210T The Greek New Testament U 5
Wi Qtr. 5 cr. Prereq: 104 or permission of instructor.

211T Attic Prose U 5
Au Qtr. 5 cr. Prereq: 104.

222 Euripides U 5
Wi Qtr. 5 cr. Prereq: 104 or permission of instructor.

223 Homer U 5
Sp Qtr. 5 cr. Prereq: 104 or permission of instructor.

224 The Greek Historians U 5
Sp Qtr. 5 cr. Prereq: 104.

225 Sophocles U 5
5 cr. Prereq: 104 or permission of instructor.

293 Individual Studies U 1-6
Intermediate readings in Greek literature. Su, Au, Wi, Sp Qtr. Prereq: 104 or equiv or written permission of dept. Repeatable to a maximum of 15 cr. hrs. This course is graded S/U.

604 Greek Historians U G 5
Comparative readings from Greek historical writers such as Herodotus, Thucydides, Xenophon, and Polybius. 2-2 hr. cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

605 Greek Tragedy U G 5
Readings in the tragedies of Aeschylus, Sophocles, and Euripides. 2-2 hr. cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

607 Greek Epic U G 5
Readings from Greek epic, including works of Homer, Hesiod, and Apollonius. 2-2 hr. cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

608 Attic Oratory U G 5
Comparative readings in Attic orators, including Lysias, Demosthenes, and Aeschines. 2-2 hr. cl. Prereq: 2 courses at 200 level. Not open to students with credit for 600.1. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

609 Readings in Plato U G 5
5 cr. Prereq: 2 courses at 200 level.

610 Greek Comedy U G 5
Comparative readings in Greek comic authors, including Aristophanes and Menander. 2 hr. cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

611 Greek Hymn, Lyric, and Elegy U G 5
Readings in Greek hymns and lyrics, including texts by Hesiod, Sappho, and Pindar. 2-2 hr. cl. Prereq: 2 courses at 200 level. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

612 Attic Prose Composition U G 5
Review of elementary syntax leading to composition of sentences and short connected passages; concurrent readings from Lysias or Xenophon. 3 cr. 2 hr. proj. Prereq: At least 1 course at 600 level.

660 Special Topics in Greek Literature U G 5
Extensive reading from masterpieces of Greek literature; topic varies. Wi Qtr. 2-2 hr. cl. Prereq: Two courses at the 200 level. Repeatable to a maximum of 20 cr hrs.

693 Individual Studies U G 1-6
Passages for reading and topics for investigation will be selected to meet the needs of individual students. Su, Au, Wi, Sp Qtr. Prereq: 2 courses at 600 level, or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-6
Au, Sp Qtr. Prereq: 4 courses more advanced than 104, or permission of chairperson. Repeatable to a maximum of 20 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtr. Prereq. Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

701 Survey of Greek Literature: Epic/Ancient Eras U G 5
A survey of authors representative of the earliest period of Greek literature, with discussion of historical background and methods of criticism. Au Qtr. 2-2 hr. cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 601.

702 Survey of Greek Literature: Classical Age U G 5
A survey of authors representative of the Classical period of Greek literature, with discussion of historical background and methods of criticism. Wi Qtr. 2-2 hr. cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 602.

703 Survey of Greek Literature: Hellenistic Era U G 5
A survey of authors representative of the Hellenistic period of Greek literature, with discussion of historical background and methods of criticism. Sp Qtr. 2-2 hr. cl. Prereq: Two 200-level Greek courses and permission of instructor; or grad standing. Not open to students with credit for 603.
H783 Honors Research U 3-5
A program of study arranged for each student with individual conferences, reports, and an honors thesis.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the Greek courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and the ASC Honors Committee; at least 2 qtrs are required of candidates for the degree BA with distinction in Greek. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

General Prerequisites for Courses Numbered 800 and Above
Prerequisites for admission to courses numbered 800 and above are graduate standing and permission of the chairperson.

802* Advanced Greek Prose Composition G 5
Weekly exercises in continuous prose composition with concurrent readings from Greek prose authors.
Wi Qtr. 2 cl, tutorial arr. Prereq: 612 or permission of instructor.

813† Studies in the Greek Orators G 5
Selected topics in Greek oratory: Lysias, Andocides, Isocrates, or Demosthenes.
2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

818 Studies in the Greek Historians G 5
Selected topics in Greek historiography: Herodotus, Thucydides, Xenophon, or Polybius.
2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

836† Studies in Hellenistic Literature G 5
Critical study of Greek authors of the third to first centuries B.C. Repeatable to a maximum of 10 cr hrs.

840 Studies in Greek Drama G 5
Critical study of one or more of the Greek dramatists: Aeschylus, Sophocles, Euripides, Aristophanes, and Menander.
2 2-hr cl. Repeatable to a maximum of 20 cr hrs.

842† Studies in Greek Lyric and Elegiac Poetry G 5
Selected topics in the lyric and elegiac poets of the seventh through fifth centuries B.C.
Au Qtr. 1 3-hr cl. Repeatable to a maximum of 15 cr hrs.

844 Studies in the Greek Philosophers G 5
Selected topics in Greek philosophy: the pre-Socratic, Plato, Aristotle, and the Hellenistic philosophers.
Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

845 Studies in Greek Epic G 5
Selected topics in Greek epic: Homer, Hesiod, or Apollonius.
1 3-hr cl. Repeatable to a maximum of 20 cr hrs.

894 Group Studies G 1-6
Repeatable to a maximum of 20 cr hrs.

993 Individual Studies G 1-5
Assigned readings; supervised individual research.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

995 Seminar G 5
The seminar comprises a two-clr sequence (Au/Wi, Wi/Sp) begun with an 800-level intensive study of an author or a genre, e.g., Aeschylus, Thucydides, Hellenistic poetry.
Wi Qtr. Repeatable to a maximum of 20 cr hrs.

999 Research G Arr
Research for thesis and dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Hausa

486 University Mall, 230 North Oval Mall, 292-3700

101 Elementary Hausa I U 5
Introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.
5 cl. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admin Cond course.

102 Elementary Hausa II U 5
Continuation of 101; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.
5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admin Cond course.

103 Intermediate Hausa I U 5
Continuation of 102; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.
5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admin Cond course.

104 Intermediate Hausa II U 5
Continuation of 103; introduction to core vocabulary and basic structures of Hausa, focus on oral proficiency.
5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admin Cond course.

Health Information Management and Systems

School of Allied Medical Professions

543 School of Allied Medical Professions Building, 1583 Perry Street, 292-0567

500 Medical Terminology U 3
Terminology pertaining to the treatment of disease, including standard abbreviations, anatomic, diagnostic, symptomatic, eponymic, laboratory, pathologic, radiology, anesthesia, operative, and drug terms.
Au, Wi, Sp Qtr. 3 cl. Not open to student with credit for All Med 500.01 and 500.02. Cross-listed in Allied Medicine.

520 Clinical Documentation, Storage, and Retrieval Systems U 5
Introduction to content, format, value and use of clinical information and standards of documentation. Survey of identification, storage and retrieval systems and the preservation and retention of data.
Au Qtr. 4 cl. 1 3-hr lab. Prereq: Written permission of instructor.

525 Organizational Analysis of Health Care Facilities U 3
Analysis of administration, governing board, medical staff committees, licensing, accrediting and certifying agencies in relation to health care facilities, and health information requirements.
Au Qtr. 3 cl. Prereq: Written permission of instructor.

535 Clinical Coding Systems U 5
In depth study of clinical coding systems, particularly ICD-9-CM.
Wi Qtr. 4 cl. 1 3-hr lab. Prereq: 501 or 520 or written permission of instructor.

540 Health Care Statistics and Data Analysis U 3
Statistical methods for the collection and computation of health care data with emphasis on epidemiology and data analysis.
Sp Qtr. 2 cl. 1 2-hr lab. Prereq: 520 or written permission of instructor.

545 Legal Concepts in Health Care and Information Services U 3
Legal system, hospital and staff liability, privacy, confidentiality, and legal requirements affecting the control and release of health information and medical records.
Wi Qtr. 3 cl. Prereq: 501 or 520 or written permission of instructor.

589 Clinical Technical Affiliation U 3
Practical applications in health information management.
Su, Au, Wi, Sp Qtrs. 1 cl, 1 8-hr clinical study. Prereq: 520 or written permission of instructor. This course is graded S/U.

620 Classification and Utilization Review Systems in Acute and Managed Care Environments U G 3
Principles of clinical and reimbursement based classification systems with emphasis on utilization review in acute and managed care environments.
Sp Qtr. 3 cl. Prereq: Enrollment in health information management or written permission of instructor.

635 Quality Management in Health Care U 4
History, development and application of quality management including utilization review and outcomes measurement in health care. Survey of tools and techniques.
Au Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: Enrollment in health information management or permissions of instructor.
640 Management of Health Information Services U 3
Principles of organizational design and behavior with emphasis on the practical aspects of managing health information services.
Au Qtr. 2 cl, 1-9 hr lab. Prereq: 520 or written permission of instructor.

645 Management Control Systems for Health Information Systems U 3
Application of work measurement, work standards, physical and financial resource management for health information services.
Wi Qtr. 2 cl, 1-3 hr lab. Prereq: 520 or written permission of instructor.

648 Microcomputer Applications in the Health Sciences U G 3
Overview of microcomputer applications in health sciences with practical applications related to discipline specific needs.
Au, Wi, Sp Qtr. 2-3 hr cl. Computer programming neither required nor taught. Cross-listed in Allied Medicine.

650 Health Care Information Systems U G 3
Survey of patient, administrative and financial information systems in health care, and the technologies and management practices to support them.
Sp Qtr. 2-2 hr cl. Cross-listed in Allied Medicine.

654 Computer-based Health Information Systems, Planning and Analysis U G 3
Focus on structured systems analysis techniques including database design for health information systems.
Au Qtr. 3 cl. Prereq: 648, All M 650, or written permission of instructor. Cross-listed in Allied Medicine.

657 Documentation and Information Services in Non-Acute Care U 3
Study of documentation and information services requirements in cancer registries, long term care, mental health, ambulatory care, and other non-acute care settings.
Wi Qtr. 2 cl, 1-6 hr clinical study. Prereq: 520 or written permission of instructor.

689 Clinical Management Affiliation U 1-10
Application of managerial techniques in the organization and administration of health information services.
Su, Au, Wi, Sp Qtr. 32-40 hrs clinical study wks. Prereq: 589. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

693 Individual Studies U G 1-5
Problems in health information management not covered in regular course offerings.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

695 Seminar in Health Information Management and Systems U G 1-4
Selected topics in health information management and systems.
Su, Au, Wi, Sp Qtr. 1-4 cl. Prereq: Admission to health information management or grad standing. Repeatable to a maximum of 12 cr hrs.

Health, Physical Education, and Recreation
(See Education: Physical Activity & Education Services; Education: Policy and Leadership; Education: Teaching and Learning)

Health Services Management and Policy
College of Medicine
246 School of Allied Medical Professions Building, 1583 Perry Street, 292-9708

693 Individual Studies U G 1-5
Study of individually designed topics not otherwise available in the curriculum.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Group studies of special topics within hospital and health services administration.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

755 Seminar U G 1-3
Investigation of current topics of significance to health services management and policy.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

800 Health Care Organization I G 4
Analysis of arrangements for the organization, financing, and delivery of health care services.
Au Qtr. 2 2 hr cl. Prereq: Written permission of instructor.

801 Health Care Organization II G 4
Continuation of 800, with emphasis on provider organizations and their roles.
Wi Qtr. 2 2 hr cl. Prereq: 800 or permission of instructor.

802 Economic Analysis of Health Services G 4
Applications of microeconomic analysis to the health services industry, with emphasis on the market structure and managerial decisions.
Wi Qtr. 2 2 hr cl. Prereq: Permission of instructor.

805 Introduction to Health Policy G 4
Introduction to public policy concepts and processes as they apply to the organization, financing, and delivery of health services.
Sp Qtr. 2-2 hr cl.

809 Field Study I: Health Organizations in the Community G 2
Identification and survey of patterns of organization and control of health care institutions; analysis of nature and extent of interrelationships among institutions.
Au Qtr. Prereq: Permission of instructor. This course is graded S/U.

810 Field Study II: Departmental Management G 2
Analysis of departmental and institutional objectives, management functions, interdepartmental relationships, and supervisory styles.
Sp Qtr. Arr. cl. Prereq: Field study in health organizations. Prereq: Permission of instructor. This course is graded S/U.

811 Legal Environment of Health Care G 4
Law as it affects health care; malpractice, hospital-physician-patient relationships, legal issues in corporations, contracts, labor, antitrust, and decisions at the end of life.
Au Qtr. 2 2 hr cl. Prereq: Permission of instructor.

815 Health Services Organizational Management G 4
Principles of organizational structure and behavior applied to health service organizations; emphasis on professionalism, governance, and unique problems of the health service setting.
Sp Qtr. 2-2 hr cl. Prereq: Permission of instructor.

8161 Human Resource Management in Health Care G 4
Human resource management principles and applications in the health care setting, including interviewing, selection, training, conflict resolution, performance evaluation, and labor-management relations.
Sp Qtr. 2 2 hr cl. Prereq: 815 or BUS-MHR 896 or equiv.

820 Health Services Finance I G 4
Principles of finance and accounting applied to health service organizations.
Wi Qtr. 2 2 hr cl. Prereq: Permission of instructor.

821 Health Services Finance II G 4
Continuation of 820 emphasizing financial analysis, financial planning, and management control.
Sp Qtr. 2 2 hr cl. Prereq: 820 or permission of instructor.

822 Health Services Financial Decision-Making G 4
Principles of financial decision-making in health service organizations, with emphasis on applications of decision support systems.
Au Qtr. 2 2 hr cl. Prereq: HIS 820 and 10 cr hrs of Acct&MIS.

824 Economic Evaluation of Health Care Programs and Services G 4
Overview and appraisal of the state-of-the-art in the evaluation of health care programs and services.
Sp Qtr. 2 11/2 hr cl. 1 2 hr lab. Prereq: 802 or permission of instructor. Cross-listed in Pharmacy.

830 Forecasting Methods in Health Services Administration G 4
Forecasting methods, with special emphasis on topics useful in health services administration, including service area determination, population forecasting, and non-historical methods.
Sp Qtr. 2 2 hr cl. Prereq: 6 cr hr of stat or permission of instructor.
831 Strategic Planning and Program Development G 4
Description of techniques and methods essential for strategic and project planning with an emphasis on social technical systems and health systems.
Wi Tr Qtr. 2-2 hr cl. Prereq: Permission of instructor.

840 Long-Term Care Management and Policy G 4
Provision of institutional and community-based care; management, financing, and regulation of long-term care services; and issues and approaches to reform.
Wi Tr Qtr. 2-2 hr cl.

845 Managed Health Care Programs G 3
Analysis of the organization, financing, and operation of managed health care programs.
Sp Qtr. 1-3 hr cl. Prereq: 800 or 801 or Permission of instructor.

850 Seminar in Health Service Management and Policy G 2-4
Policy process and methods of decision making; assignment and solution of managemental problems; case studies, with emphasis on strategy and implementation.
Sp Qtr. 2-2 hr cl. Prereq: Enrollment in MHA or permission of instructor. Repeatable to a maximum of 4 cr hrs.

855 Health Care Policy and Politics G 3
Political characteristics of the policies and mechanisms for the provision of personal health services, with emphasis on community, state, and federal levels of policy-making.
Au Tr Qtr. 1-2 hr cl.

860 Evaluation G 4
Models of evaluation, including experimental designs, quasi-designs, and case studies with discussion of barriers to effective use of evaluation results in decision-making.
Wi Qtr. 3 1/2-2 hr cl. Prereq: Grad level course in stat or permission of instructor.

861 Decision Analysis G 4
Decisions as made by individuals, groups, and organizations comprising the health delivery system; examination of decision-maker behavior; strategies to improve decisions.
Sp Qtr. 2-2 hr cl. Prereq: Permission of instructor.

870 Advanced Studies in Hospital and Health Services Administration G 2-4
Seminar in special topics in hospital and health services administration with content varying from quarter to quarter.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

880 Operations Management for Health Service Organizations G 4
Concepts and techniques for managing operations in health service organizations; emphasis on management perspective and decision-making.
Wi Qtr. 2-2 hr cl. Prereq: Bus-Mgt 702 or equiv and Bus-Fin 720 or equiv.

881 Topics in Health Services Operations Management G 4
Selected topics in health services operations management, such as operations strategy, quality management, process design, materials management, and facility location.
Sp Qtr. Prereq: 860 or permission of instructor.

998 Thesis Research G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Arr. This course is graded S/U.

Hebrew

205 Botany and Zoology Building, 1735 Neil Avenue, 292-0255

101 Elementary Hebrew I U 5
Conversation, reading, writing, vocabulary building, phonetics, and grammar.
Su, Au, Wi, Sp Qtrs. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

102 Elementary Hebrew II U 5
Reading of modified passages from modern Hebrew literature supplemented with additional study of grammar.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Hebrew I U 5
Reading of passages from various periods of Hebrew literature; review of salient points of elementary grammar and introduction to elements of classical Hebrew.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

104 Intermediate Hebrew II U 5
Reading of modern Hebrew short stories, poems, and essays; special emphasis on oral practice and Hebrew idioms.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

205 Modern Hebrew Grammar, Conversation, and Composition U 5
Development of communication skills in Modern Hebrew; special emphasis on using new grammatical skills in advanced forms of composition and conversation.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 or permission of instructor. Not open to native speakers through regular course enrollment or EM credit.

241 Culture of Contemporary Israel U 5
Introduction to the culture of modern Israel: historical roots, socio-political institutions and developments, and literary and artistic creations reflecting the realities of contemporary Israeli society.
Su, Au, Wi, Sp Qtrs. 5 cl. H1214 (honors) may be available to students in an honors program or by permission of instructor. GEC and arts and humanities course.

253 Individual Studies U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

294 Group Studies U 1-15
Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.

370 Biblical and Post-Biblical Hebrew Literature U 5
Reading and analysis of selected chapters from the Hebrew scriptures and post-biblical Hebrew writings representative of major historical, cultural, and literary trends.
Su, Au, Wi, Sp Qtrs. 5 cl. H1310 (honors) may be available to students in an honors program or by permission of instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for 273. GEC arts and humanities course.

371 Medieval Hebrew Literature in Translation U 3
Post-biblical and medieval Hebrew literature from the Near East, North Africa, and Europe.
Sp Qtr. 3 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 272.

372 Modern Hebrew Literature in Translation U 5
Modern Hebrew literature; works of major writers from the middle of the 18th century to the present; emphasis on European literary influences.
Au, Wi, Sp Qtrs. 5 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 271. GEC arts and humanities course.

373 Prophecy in the Bible and Post-Biblical Literature U 5
The dynamics of Israelite prophecy and apocalyptic in the context of ancient Near Eastern culture.
Au Qtr. 5 cl. Prereq: 273. GEC arts and humanities course.

374 Women in Biblical and Post-Biblical Hebrew Literature U 3
An examination of the social, legal, and religious position of women as they appear in the Hebrew scriptures and Rabbinic writings.
Au, Wi, Sp Qtrs. 3 cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for 274. Taught in English.

376 The Jewish Mystical Tradition U 5
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience.
Au, Wi, Sp Qtrs. 3 80-min cl. Not open to students with credit for Rel Stds 376. Cross-listed in Religious Studies. GEC arts and humanities course.

378 Biblical and Post-Biblical Wisdom Literature U 5
An examination of the various ideas, themes, attitudes, implications, and genres of biblical and post-biblical wisdom literature.
Au, Wi, Sp Qtrs. 2 2-2 hr cl. Prereq: English 110 or 111 or equiv. GEC arts and humanities course.
401 Review of Grammar and Composition U 5
Review of Hebrew grammar; composition on assigned topics and some practice in translation.
Wi Qtr. 5 cl. Prereq: 104.

402 Intermediate Hebrew Conversation and Composition U 5
Vocabulary building, practice in speaking Hebrew, conversation and composition dealing with social and everyday aspects of Israeli life.
Sp Qtr. 5 cl. Prereq: 104 or permission of instructor.

403* Hebrew Syntax U 5
Parts of speech, types of sentences, word order, and syntactic analysis.
Au Qtr. 3 cl. Prereq: 104 or permission of instructor.

421 Modern Hebrew Short Story U 5
Reading and discussion of masterpieces of modern Hebrew short stories in the 19th and 20th centuries.
Au Qtr. 5 cl. Prereq: 104 or permission of instructor.

422 Modern Hebrew Poetry U 3
Reading and discussion of masterpieces of modern Hebrew poetry in the 19th and 20th centuries.
Sp Qtr. 3 cl. Prereq: 104 or permission of instructor.

425 Readings in the Mishnah U 5
Reading and discussion of the ideas and teachings of the Mishnah as they are reflected in the unique Mishnaic language.
Wi Qtr. 2 2-hr cl. Prereq: 104 or permission of instructor.

601 Biblical Hebrew Grammar U G 5
Introduction to the phonology, morphology, and syntax of the Biblical Hebrew idiom.
Au Qtr. 5 cl. Prereq: 104 or permission of instructor.

604 Hebrew Phonetics and Vocalization U G 3
Rules of Hebrew phonetics and vocalization; lectures and abundant practical exercises.
Au Qtr. 3 cl. Prereq: 104 or permission of instructor.

605 Hebrew Morphology U G 5
The morphological system of Hebrew; the interrelations between roots and forms.
Wi Qtr. 5 cl. Prereq: 604 or permission of instructor.

611 History of the Hebrew Language U G 5
Genealogical and typological relations within the Semitic family, a survey of Biblical, Mishnaic, and modern Hebrew.
Au Qtr. 2 2-hr cl. Prereq: 104 or permission of instructor.

620 Introduction to Hebrew Literary and Cultural Texts U G 5
Literary and cultural Hebrew texts from the biblical to the modern period; students will develop the ability to read critically and to build analytical vocabulary. Students will develop the ability to analyze critically and to build analytical vocabulary. Students will develop the ability to analyze critically and to build analytical vocabulary.
Au, Wi, Sp Qtr. 2 2-hr cl. Prereq: 204 or permission of instructor.

621* The Bible as Literature: Selected Readings U G 5
Critical study of basic issues in the language and analysis of biblical texts.
Sp Qtr. 2 2-hr cl. Prereq: 421 or 422 or 423.

671 The Problem of Evil in Biblical and Post-Biblical Literature U G 5
Study of the vexing problem of evil, the seeming contradiction between tradition and experience, extensive readings and discussions of appropriate biblical and post-biblical materials.
Wi Qtr. 4-5 cl. Prereq: 273 or 274 or equiv or permission of instructor. Given in English, but grad students and undergrad Hebrew majors will read the texts in the original Hebrew.

680 Basic Bibliographic and Reference Tools in Hebraica, Judaica, and Semitics U G 5
A survey of tools which may be used in doing research at all levels in the study of Hebraica, Judaica, and Semitics.
Au, Wi, Sp Qtr. 2 2-hr cl.

693 Individual Studies U G 1-5
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-15
Au, Wi, Sp Qtr. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

721 Studies in Hebrew Poetry U G 5
Advanced study of specific poetic periods, figures, and/or topics involving extensive readings and discussions of appropriate primary and secondary materials.
Su, Au, Wi, Sp Qtr. Prereq: 2 2-1/2-hr cl. Prereq: 10 hrs of Hebrew at the 400 level and above, or equiv. Repeatable to a maximum of 15 cr hrs.

H783 Honors Research U 3-5
Offers students with special aptitudes a greater opportunity to do independent study than is possible in the ordinary course; work in conference, library, or phonetics laboratory.
Su, Au, Wi, Sp Qtr. Prereq: 4th yr standing with a grade of A in at least half of the Hebrew courses and an average of B in the remainder; permission of Instructor under whose supervision the work is to be completed. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

801* Teaching Hebrew at the College Level G 5
Methods and techniques for teaching Hebrew at the college level.
Au Qtr. 2 wk intensive workshop followed by 1 2-hr wkly cl. Prereq: Teaching assoc in NELC or permission of instructor. For students enrolled in this course, the minimum number of hrs required for graduation is increased by 5 cr hrs.

811 Seminar in Hebrew Studies G 5
Intensive investigation of a selected topic or problem in Hebrew linguistics, philology, literature, or literary culture.
Su, Au, Wi, Sp Qtr. 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

998 Research in Hebrew G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtr. This course is graded S/U.

History

106 Dutles Hall, 230 West 17th Avenue, 292-2674

111 Western Civilization: Antiquity to the Seventeenth Century U 5
Ancient civilizations (Near East, Greece, Rome); barbarian invasions; medieval civilizations (Byzantium, Islam, Europe); Renaissance and Reformation. H111 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq or conc: English 110 or 111. Not open to students with credit for 100.01. This course is available for EM credit. GEC historical survey course. SS Admin Cond course.

112 Western Civilization: Seventeenth Century through Modern Times U 5
Political, scientific, and industrial revolutions; nationalism; the two world wars; decline of empires; the cold war. H112 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 111 and prereq or conc: English 110 or 111. Not open to students with credit for 100.02 or 100.03. This course is available for EM credit. GEC historical survey course. SS Admin Cond course.

121 African Civilizations to 1870 U 5
Exploration of the political, social, and economic history of precolonial African civilizations, using a variety of interdisciplinary approaches and materials.
Prereq: English 110 or 111 or equiv. Not open to students with credit for AfrAm&Hist 121. Cross-listed in African-American and African Studies. GEC historical survey course.

122 African Civilizations, 1870 to the Present U 5
Exploration of the political, social, and economic history of the colonial and independent African countries, using a variety of interdisciplinary approaches and materials.
Prereq: 121 or AfrAm&Hist 121 or Black St 121. Not open to students with credit for AfrAm&Hist 122. Cross-listed in African-American and African Studies. GEC historical survey course.
131 Comparative Asian Civilizations I  U 5
Comparative survey of development of Asian civilizations, Neolithic Age to 1500; includes ancient Near East, India, China, Japan; rise of Islam, Buddhism, Hinduism; Mongol domination. Prereq or concur: English 110 or 111. Not open to students with credit for 140.01 or 140.02 or 140.03. GEC historical survey course. SS Admis Cond course.

132 Comparative Asian Civilizations II  U 5
Comparative survey of Asian civilizations, 1500 to modern era; includes age of great dynasties (Ottoman, Safavid, Mughal, Ming, Ch'ing, Tokugawa); imperialism; nationalism; independence. Prereq: 131 and prereq or concur: English 110 or 111. Not open to students with credit for 140.01 or 140.02 or 140.03. GEC historical survey course. SS Admis Cond course.

151 American Civilization to 1877  U 5
The political, constitutional, social, and economic development of the United States from the colonial period through the era of Reconstruction. H151 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq or concur: English 110 or 111. Not open to students with credit for 150.01. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

152 American Civilization since 1877  U 5
The political, constitutional, social, and economic development of the United States from the era of Reconstruction to the present. H152 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 151 and prereq or concur: English 110 or 111. Not open to students with credit for 150.02. This course is available for EM credit. GEC historical survey course. SS Admis Cond course.

171 Latin American Civilizations to 1825  U 5
Latin American political, social, economic, and cultural history from the Pre-Columbian times to independence (1825) focusing on imperialism, religion, minorities, war, and rebellion. 2-2 hr cl. H171 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq or concur: English 110 or 111. Not open to students with credit for 150.03 or 161. GEC historical survey course.

172 Latin American Civilizations since 1825  U 5
Latin American political, social, economic, and cultural history from independence (1825) to the present focusing on neo-colonialism, instability, underdevelopment, militarism, and minorities. 2-2 hr cl. H172 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 151 and 152, or 171; and prereq or concur: English 110 or 111. Not open to students with credit for 150.03 or 161 or 240. GEC historical survey course.

181 World History to 1500  U 5
History of the human community to 1500, primary emphasis on history of civilizations, and secondary emphasis on patterns of regional and hemispheric integration. Prereq: English 110 or 111 or permission of instructor. Not open to students with credit for 200.01. GEC historical survey course.

182 World History, 1500 to Present  U 5
History of the human community from 1500 to the present, primary emphasis on processes of global integration, and secondary emphasis on comparative civilization. Prereq: 131 or 200.01, and prereq or concur: English 110 or 111. Not open to students with credit for 200.02. GEC historical survey course.

General Prerequisites for Courses Numbered 300
Unless otherwise indicated, the prerequisite for 300-level courses is credit for one 10 hr GEC Historical Survey sequence or permission of the instructor.

301 Introduction to Ancient Mediterranean Civilizations  U 5
Comparative historical analysis of ancient Mediterranean civilizations: emphasis on Greek and Roman societies, urbanism, empires, literature, arts, from the Bronze Age to Fall of Rome. Balsor, Gregory, and Rosenberg. Not open to students with credit for 110.01 or 201. SS Admis Cond course.

306 Classical Archaeology  U 5
Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites. Gregory. Not open to students with credit for 240, Classics 240, or Hist Art 240. Cross-listed in Classics and history of Art as 240. GEC arts and humanities cultures and ideas course.

307 World War II  U 5
Survey of the causes, conduct and consequences of the Second World War. Grimstley, Guilmartin, and Millett. 5 cl. Not open to students with credit for 281. SS Admis Cond course.

308 The Vietnam War  U 5
An examination of the causes, conduct, and effects of the revolutionary war in Vietnam from 1945 to 1975. Guilmartin and Millett. 5 cl. Not open to students with credit for 282.

310 History of Ohio  U 5
A general survey of state history—social, economic, religious, and political—from the Indian period to the present time. Vini Tine. 5 cl. Not open to students with credit for 683.

312 Introduction to Modern Europe  U 5
Examination of selected major themes in European history from the French Revolution to the present. Au Qtr. 5 cl or 2-2 hr cl.

323 History of African-Americans  U 5

323.01 History of African-Americans in the Age of Slavery  U 5
Origins of modern slavery; its development in the US; the evolution of African-American life and culture from 1619 to the end of the Civil War. Russell and Shaw. Not open to students with credit for 223 or 260; or AIM & ART 223, 233.01, or 345.

323.02 History of African-Americans from Emancipation to the Present  U 5
The rise of debt peonage among blacks; the formation of the northern ghettos; the Civil Rights Movement and beyond; Russell and Shaw. Not open to students with credit for 224 or 260; or AIM & ART 224, 238, 323.02, or 345.

325 Introduction to Women's History: The American Experience  U 5
American women from pre-European-settlement to the present; experiences of Native American, African-American, Mexican-American, Puerto Rican, Asian American, Jewish, Appalachian, working-class, and lesbian women. Rupp and Shaw. H325 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 237. SS Admis Cond course. GEC social diversity course.

330 Introduction to Jewish Civilization  U 5

330.01 Ancient and Medieval Jewish Civilization  U 5
Jewry and Judaism from remote antiquity to the 15th century A.D. Not open to students with credit for 251. SS Admis Cond course. GEC arts and humanities cultures and ideas course.

330.02 Modern Jewish Civilization  U 5
Jewry and Judaism from the 15th century to the present. Not open to students with credit for 252. SS Admis Cond course.

331 The Holocaust  U 5
The historical background of the holocaust; dimensions of destruction; world response; post-war trials; moral and philosophical issues. Beyerchen. Not open to students with credit for 254. SS Admis Cond course.

336 Introduction to Russian Civilization  U 5
A survey of Russian civilization from earlies: times to 1917; geography, peoples, culture, social, political, and religious institutions, and the impact of Western influence, Brexofge, Hoffmann, and Levin. Not open to students with credit for 220. SS Admis Cond course.

340 Islam, Politics, and Society in History  U 5
Elaboration of prophetic message of Islam into governing principles of Islamic polity and society; evolution of these principles over the centuries. Findley. Au Qtr. Not open to students with credit for 258. SS Admis Cond course.

344 Introduction to Contemporary China  U 5
Origins of the Chinese revolution and the rise of Mao; problems of political integration, economic growth, and social transformation. Reed. Not open to students with credit for 268. SS Admis Cond course.

345 History of East Asia  U 5

345.01 History of East Asia to 1800  U 5
East Asian history from the earliest times to 1800: Confucianism, Buddhism, Shinto; Chinese culture and its spread to Japan; the growth of indigenous Japanese culture. Bartholomew, Brown, and Reed. Not open to students with credit for 265. SS Admis Cond course.

345.02 History of East Asia since 1800  U 5
Political, economic, cultural, and ideological change in East Asia; interregional and international relations; the feudal legacy, nationalism, and communism. Bartholomew, Brown, and Reed. Not open to students with credit for 266. SS Admis Cond course.
346 Introduction to Asian American History U 5
A survey of the Asian American experience in the United States, from the mid-19th century to the present. Wu.
Sp Qtr. 5 cl or 2-2.5-hr cl.

350 History of Modern Africa U 5
Overview survey of political, economic, and social developments in colonized and post-independence Africa. Sikeinga.
Wi Qtr. 5 cl or 2-2.5-hr cl. Prereq: One 10-15 hr GEC historical survey sequence or permission of instructor. Not open to students with credit for A&IAM&ST 355. Cross-listed in African-American and African Studies.

360 Scientific Revolutions in Their Social Context U 5
Models of scientific innovation and study of selected examples of the great scientific revolutions: Copernicus, Chemical, Darwinian, Quantum, Genetic, and others. Burnham.
Not open to students with credit for 233. SS Admis Cond course.

366 Environmental Issues in International and Historical Perspective U 5
International overview of the evolution of environmental problems and of the rational and movements for protecting the environment, with concentration on the 19th and 20th centuries.
Not open to students with credit for 236.

375 History of American Criminal Justice U 5
History of crime, criminal law, law enforcement agencies, prisons, and juvenile courts. Watts.
Not open to students with credit for 286. SS Admis Cond course.

380 The History of War U 5
A survey of the main concepts and issues involved in the study of war in world perspective using case studies from prehistoric times to the present. Grimsley.
Wi Qtr. 5 cl or 2-2-hr cl.

387 Introduction to Business History: The American Experience U 5
Study of the evolution of "American capitalism" from pre-capitalist economies of the medieval period to the end of the 20th century. Blackford, Childs, and Kerr.
Not open to students with credit for 564.

394 Group Studies U 5
Groups of students are given an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

398 Introduction to Historical Thought U 5
Investigation of the methods historians use to understand the past.
Su, Au, Wi, Sp Qtrs. 2-2-hr cl. H398 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 302. Some classes will visit the Ohio Historical Society. A minimum grade of C in 398 is required for admission to the history major.

H399 Introduction to Historical Research U 5
Research strategies and techniques; topics will vary.
Au Qtr. Prereq: 202 or 399 or permission of instructor.

General Prerequisites for Courses Numbered 500
Unless otherwise indicated, the prerequisites for 500-level courses are credit for one 10 hr GEC Historical Survey sequence and junior or senior standing or permission of instructor. 500-level courses may provide graduate credit only in departments other than History.

500 The Ancient Near East U 5
The ancient history of Mesopotamia, Egypt, Anatolia, Persia, Israel, and the Levant to the establishment of the Persian Empire; readings from sources in translation. Balcer.
Not open to students with credit for 600.

501 Greek History U 5
501.01 History of Archaic Greece
Not open to students with credit for 601.01.

501.02 History of Classical Greece
Not open to students with credit for 601.02.

501.03 History of the Eastern Mediterranean during the Bronze Age
Studies in the civilizations of Minoan Crete and Helladic/Mycenaean Greece in relationship with the Trojans, Hittites, Philistines, Cypriotes, Syrians, and Egyptians. Balcer.
Not open to students with credit for 601.03.

502 Hellenistic Near East U 5
The cultural history of the Achaemenid and Hellenistic kingdoms from c. 600 to 31 B.C., with emphasis upon Greek and Persian interaction in the Near East. Balcer.
Not open to students with credit for 602.

503 Roman History U 5
503.01 Roman Republic
A history of Rome from the founding to the fall of the Roman Republic; readings in ancient sources in translation. Rosenstein.
Not open to students with credit for 603.01.

503.02 Early Roman Empire, 31 B.C.-A.D. 180
The Roman Empire at its height; internal politics, imperial administration, and religion; readings from sources in translation. Rosenstein.
Not open to students with credit for 603.02.

503.03 Later Roman Empire, A.D. 180-476
Decline and fall of the Empire in the West; military, social, economic problems; religious conflicts; emergence of Germanic kingdoms; readings from sources in translation. Gregory.
Not open to students with credit for 603.03.

504 The Ancient Mediterranean World U 5
504.01 War in the Ancient Mediterranean World
An advanced survey of military history from the late Bronze Age to the fall of the Roman Empire in the West. Rosenstein.
Wi Qtr. 2 2-hr cl. Not open to students with credit for 604.01.

504.02 The Ancient Mediterranean City
Cities in the ancient Near East, Greece, and Rome, with an emphasis on their physical form and historical importance.
Not open to students with credit for 510 or 604.02.

505 Byzantine History U 5
505.01 Early Byzantine Empire
History of Byzantium, A.D. 330-843, with emphasis on internal political and religious developments and the relationship between Byzantium and its neighbors. Gregory.
Not open to students with credit for 607.01.

505.02 Later Byzantine Empire
History of Byzantium, A.D. 843-1453, with emphasis on internal developments, the Crusades, the Fall of the City, and the legacy of Byzantium. Gregory.
Not open to students with credit for 607.02.

506 History of Early Christianity U 5
Christian origins and expansion to 600 A.D.; conflict with Roman Empire; internal dissent; basic institutions; Christian intellectuals; the imperial established church; monasticism; papacy; the barbarians and Christianity. Lynch.
Not open to students with credit for 570.

507 History of Medieval Christianity U 5
The late ancient and early medieval church; the papacy and the Carolingians; the Cluniac reform; the new monasticism; heresy; the problems of late medieval Christianity. Lynch.
Not open to students with credit for 571.

508 Medieval Europe U 5
508.01 Medieval Europe I: 300-1100
Europe 300-1100: Roman decline, Christianization of Europe, barbarian invasions; Carolingian renaissance; early feudalism and manorialism; investiture contest; crusades; economic and intellectual revival. Lynch.
Not open to students with credit for 606.04.

508.02 Medieval Europe II: 1100-1450
Europe 1100-1500; the 12th-century Renaissance; classical feudalism; rise of Christendom; the great economic revival; universities and scholasticism; religious dissent; and 14th-century crises. Lynch and Hanawalt.
Not open to students with credit for 510 or 606.05.

508.03 Medieval England
England from the Roman conquest to 1485; Anglo-Saxon society and institutions; the Norman conquest; law and Parliament; social, intellectual, and economic growth of the English people. Hanawalt.
Not open to students with credit for 630.

509 Italian Renaissance U 5
The literary, artistic, and intellectual achievements primarily of Renaissance Italy against the background of economic, political, and social developments in western Europe. Davis.
5 1-hr cl.
509.01 1400s, Communal Age to Quattrocento
Beginnings and flourishing of the Italian Renaissance, from the era of independent communes to the quattrocento.
Au Qtr. Not open to students with credit for 609.

509.02 High Renaissance and Beyond
Climax of the Italian Renaissance in the era of Michelangelo and Machiavelli, and its eventual decline during the sixteenth century.
Wi Qtr. Prereq: 10 cr hrs of history.

511 The Reformation U G 5
The rise and growth of Protestantism and the Catholic Reformation of the 16th century against the background of economic, political, and social developments in western Europe. Parker.
Not open to students with credit for 610.

512 European History U G 5
512.01 Early Modern Europe, 1600-1775
A study of the rise of the absolute state, the changing diplomatic alignments, and the Enlightenment. Van Kley.
Not open to students with credit for 612.

512.02 French Revolution and Napoleon
The background of the Revolution; the social bases and political schisms of the first three Revolutionary governments, 1789-1795; the program and role of Napoleon. Van Kley.
Not open to students with credit for 613.

512.03 Europe, 1815-1900
Nationalism, the democratic movement, economic growth, imperialism, and cultural advance from the Congress of Vienna to World War I.
Not open to students with credit for 614.

512.04 Europe 1900-1950
The important events and issues in European history from 1900-1950.
Wf Qtr. 2-2 hr cl.

512.05 Europe since 1950
Europe since the disaster of the Second World War; recovery, decolonization, integration, creation of a new society, and search for identity. Fink.
Not open to students with credit for 634.

513 European Intellectual and Cultural History U G 5
2-2 hr cl. Cross-listed in Comparative Studies in the Humanities.
513.01 The Age of Modernity in the 19th Century
Intellectual and cultural history in Europe in the 19th century with emphasis on historic events which marked the formation of historical consciousness in the 19th century. Fogu.
Wi Qtr. Not open to students with credit for 622.01, or Comp Std 513.01 or 622.01.

513.02 The Age of Modernity in the 20th Century
Intellectual and cultural history in Europe in the 20th century with emphasis on historic events which marked the formation of historical consciousness in the 20th century. Fogu.
Sp Qtr. Not open to students with credit for 622.02, or Comp Std 513.02 or 622.02.

514 English History U G 5
514.01 Tudor and Stuart Britain, 1500-1700
The religious, political, economic, imperial, and intellectual development of the English people from 1485 to 1714, with special attention to the constitutional struggles of the 17th century. Creasy.
Not open to students with credit for 631.

514.02 England in the 18th and 19th Centuries
The course of political, social, and intellectual change, of industrial and commercial growth in Hanoverian and Victorian England. Garland.
Not open to students with credit for 632.

514.03 England in the 20th Century
A study of Britain since 1900 with special emphasis on the rise of the Labour party and the development of the social welfare state. Garland.
Not open to students with credit for 633.

515 French History U G 5
515.01 France, 1815-1914
France's transformation from a rural, traditional society to a modern, industrial society, and the relation of this transformation to 19th-century political and intellectual movements. Rothney.
Not open to students with credit for 615.

515.02 France in the 20th Century
The impact on France of two world wars, the depression and decolonization, with emphasis on the breakdown of the political system and the emergence of a new society from the wreckage of the old. Rothney.
Not open to students with credit for 616.

516 Modern Italy, 1848-Present U G 5
Introduction to the history of Italy from the Risorgimento to the present. Fogu. Wi Qtr. 2-2 hr cl.
533 Latin American History U G 5
533.01 Colonial Latin American History
Mayan, Aztec, and Incan Empires; the Spanish and Portuguese conquests and the transplanting of Iberian institutions; the Baroque period; the Bourbon Century and the Enlightenment. Andrien and Riley.
Not open to students with credit for 651.01.
533.02 South America since Independence
Nation-building in the South American republics during the 19th and 20th centuries with special emphasis on Argentina and Brazil.
Not open to students with credit for 651.02.
533.03 Central America and the Caribbean since Independence
Political, economic, and cultural history of West Indies (Cuba, Haiti, Dominican Republic, etc.) and Central America (Panama, Guatemala, Nicaragua, etc.) and relations with United States. Riley.
Not open to students with credit for 651.03.
533.04 History of Brazil
History of Brazil during colonial and independence periods with major emphasis on the 19th and 20th centuries. Riley.
Not open to students with credit for 651.04.
533.05 History of Mexico
History of Mexico during precolonial, colonial, and independence periods with emphasis on the 19th and 20th centuries. Riley.
Not open to students with credit for 651.05.
536 History of Russia to 1725 U G 5
A survey from the origins of the Russian state to the end of the reign of Peter the Great. Levin. Not open to students with credit for 653.
537 History of Russia U G 5
537.01 Imperial Russia, 1725-1914
A survey from the end of the reign of Peter the Great to the outbreak of World War I. Breyfogle and Hoffmann.
Not open to students with credit for 653.
537.02 Revolutionary Russia, 1850-1917
The revolutions of 1861 and 1917 from the standpoint of the revolutionary movements of the 19th century and changing social and political forces. Breyfogle and Hoffmann.
Not open to students with credit for 657.
538 History of the Soviet Union U G 5
Beginning with the background and events of the revolution of 1917, analysis of developments in Russian history from World War I to the present. Hoffmann. Not open to students with credit for 657.
540 Core Regions of Islamic Worlds U G 5
540.01 Islamic Society, 610-1258
Origins and early development of selected fundamental Islamic institutions in their historical and cultural context. Hathaway.
Not open to students with credit for 641.
540.02 History of Iran
A history of Iran in the Islamic period, focusing on nomadic-urban interaction and Iranian culture. Dale. 
Wi Qtr. 2-2-hr cl.
540.03 Ottoman Empire, 1300-1800
The Ottoman Empire from frontier warrior band to world power to "Sick Man of Europe"; factors in resurgence and decline; cultural interaction with the West. Findley.
Prereq: Prior course work in Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 642.
540.04 Middle East in the 19th Century
Modernization of the Middle East, from the early autocratic modernizers to the 19th century: economic, social, political, and intellectual transformations; modern Middle East in world perspective. Findley.
Prereq: Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 644.
540.05 Middle East in the 20th Century
Modernization of the Middle East in the 20th century. Findley.
Prereq: Prior course work on Middle Eastern history or Islamic culture is strongly recommended. Not open to students with credit for 644.
541 Wider Islamic World U G 5
541.01 Islamic Spain and North Africa
Major problems in history and culture of Islamic Spain (712-1492) and North Africa (641-present), including Egypt; special emphasis on nomadism and revivancism. Not open to students with credit for 640.
541.02 History of Islam in Africa
Examination of the history and spread of Islam in Africa and its impact on African social, economic, and political institutions. Sikaienga.
Sp Qtr. 2-2-hr cl. Prereq: 121 or 122, or AAM&AS 121 or 122, or grad standing. Not open to students with credit for 643 or AAM&AS 643.
555 Anglo-American History, 1607-1763 U G 5
The history of England mainland American colonies from 1607 to 1763; emphasis on social, cultural, political, and economic development of the colonies. Pan.ana.
Not open to students with credit for 656.

557 Early U.S. History U G 5
557.01 American Revolution and New Nation, 1763-1800
Analysis of social, economic, cultural, and political changes in 18th century America. Connell and Newhall. Not open to students with credit for 655.

557.02 Jeffersonian and Jacksonian Democracy, 1800-1845
A continuation of 557.01 but may be taken separately; primary emphasis on social and political history of postrevolutionary America. Roth. Not open to students with credit for 659.

557.03 Civil War and Reconstruction
The causes, character, and consequences of America's intersectional war and its post-war settlement. Benedict, Cashen, and Grimsley. 5 cr or 2 2-hr cr. Not open to students with credit for 662.

559 History of Slavery in North America from Colonial Times to 1860 U G 5
The social system of the Old South; the various aspects of succession and the impact of war. Cashen. 5 cr or 2 2-hr cr. Not open to students with credit for 661.

560 Westward Movement in American History U G 5
The westward spread of settlement and the influence of the westward movement on American development. Blackford. Not open to students with credit for 660.

561 History of American Science U G 5
Social and intellectual factors from colonial beginnings to professionalization: Darwinism, American preeminence, the modern scientific crisis. Burnham. Prereq: Jr standing. Not open to students with credit for 680.

562 History of American Medicine U P G 5
Disease, public health, and the profession and practice of medicine in America from colonial times to the present. Burham. 5 cr. Not open to students with credit for 684.

563 Emergence of Modern America, 1877-1917 U G 5
Intensive study of political, economic, social, and cultural change in the U.S. from 1877 to 1917: industrialism, unionism, populism, progressivism, immigration, and urbanization. Kerr and Van Tine.

565 America in Crisis, 1917-1945 U G 5
Intensive study of political, economic, social, and cultural change in the U.S. from 1917-1945: World War, isolationism, internationalism, prosperity, and depression. Childs, Kerr, and Van Tine.

566 Contemporary America since 1945 U G 5
Intensive study of political, economic, social, and cultural change in the U.S. since 1945: war, cold war, social pluralism, institutional conflicts, and domestic crises. Hahn, Hartmann, Hogan, Stebenne, and Watts.

567 American Environmental History U G 5
The history of American ecosystems from the last Ice Age to the present; focuses on historical debates over the causes and consequences of environmental change. Roth. Wi, Sp Qtr. 2 2-hr cr. Prereq: Soph standing.

569 American Labor History U G 5
Evolution of working-class life, culture, politics, and trade unionism in America from the late 19th century to the present. Van Tine. Not open to students with credit for 689.01.

575 United States Constitutional History: The Federal System U G 5
Historical development of constitutional powers and functions of the federal and state governments and intergovernmental relationships. Benedict. Not open to students with credit for 685.

576 United States Constitutional History: Rights and Immunities U G 5
Historical development of the constitutional rights and immunities of the citizen. Benedict. Not open to students with credit for 686.

577 Chicano History from Spanish Colonial to Present Period U G 5
Chicano history from Spanish colonial period to 1900 and from 1900 to the present era. Sp Qtr.

577.01 Chicano History, From the Spanish Colonial Period to 1900
Chicano experience from the late 16th century to 1900, with a special emphasis on race, class, and gender relations.

577.02 Chicano History, From 1900 to the Present Era
Chicano experience from 1900 to the present era, with a special emphasis on race, class, and gender relations.

578 American Religious History U G 5
Survey of religious history of the United States from colonial times to the present.

579 American Cultural and Intellectual History U G 5
Major currents in American thought and culture. Conn. 2 2-hr cr.

579.01 American Cultural and Intellectual History, 1789-1900
Major currents in American thought of the 19th century. Au Qtr.

579.02 American Cultural and Intellectual History in the 20th Century
Major currents in American thought and culture, 1900-present. Wi Qtr. Not open to students with credit for 290.

580 History of European Warfare U G 5
580.01 History of European Warfare from the Renaissance to 1870
An analysis of military affairs and of their interaction with political and diplomatic history. Guilmarin. Not open to students with credit for 625.01.

580.02 History of European Warfare from 1870 through World War II
A continuation of 580.01; an analysis of the military and diplomatic events which shaped the world in the 20th century. Grimsley and Guilmarin. Not open to students with credit for 625.02.

581 European International History U G 5
581.01 19th Century
History of the international relations and diplomacy of Europe from the Congress of Vienna to the First World War. Fink. Not open to students with credit for 623.01.

581.02 20th Century
History of the international relations and diplomacy of Europe from the First World War to the present. Fink. Not open to students with credit for 623.02.

582 American Military Policy U G 5
582.01 American Military Policy, 1607-1914
American military policy from the colonial period through World War I and America's emergence as a world power; emphasis on war-waging and military institutions. Grimsley and Millett. Not open to students with credit for 668.01.

582.02 American Military Policy, 1914-1995
Emphasis on collective security, nuclear strategy, and the reciprocal impact of society and military institutions. Grimsley and Millett. Not open to students with credit for 668.02.

583 U.S. Diplomacy U G 5
583.01 U.S. Diplomacy from Independence to 1900
Domestic and international setting of U. S. diplomacy from the Revolutionary War to the emergence of the United States as a world power. Hahn and Hogan. Not open to students with credit for 670.01.

583.02 U.S. Diplomacy, 1900-1945
Domestic and international setting of U.S. diplomacy during the period of transition from the multipolar world of 1900 to the bipolar world of 1945. Hahn and Hogan. Not open to students with credit for 670.02.

583.03 U.S. Diplomacy since 1945
Domestic and international setting of U.S. diplomacy from the beginning of the Cold War in the 1940’s to its waning in the 1990’s. Hahn and Hogan. Not open to students with credit for 670.03.

587 Business History in the World U G 5
587.01 Comparative Business History
An historical comparison of the development of modern forms of business and business management in Great Britain, the United States, and Japan. Bartholomew and Blackford. Not open to students with credit for 568.

587.02 Science, Technology, and Business in Japan
An examination of the historical development of business from the early 17th century to the present with attention to the interconnections between business, technology, and science. Bartholomew. Not open to students with credit for 649.
588 Slavery in Comparative Context U G 5
Different forms of slavery and other forms of unfree labor in different cultures, focusing mainly on Europe, the Americas, and Africa. Robertson. Sp Qtr: 2-3 hr cl. Not open to students with credit for 668 or AL&AS 669.

589 Marginal Groups in the Non-Western World U G 5
Comparison of the experiences of several marginal and minority groups in the major non-Western civilizations from roughly the 16th-20th centuries. Hathaway.
Sp Qtr: 2-2 hr cl.

593 Individual Studies U G 1-5
Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in 693. This course is graded S/U.

594 Group Studies U G 1-5
The investigation of particular problems in various fields of history. Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs, including cr hrs earned in 694.

596 Introduction to Quantitative Methods in History U G 5
Prepares students to use quantitative methods in historical research and to take intermediate courses in statistics and data analysis. Roth and Watts.
Prereq: Permission of instructor. Not open to students with credit for 681 or 765.01.

597 Critical Issues of the 20th-Century World U 5
Contemporary global problems in historical perspectives; war and threat of war; intercontinental, racial, ideological, and economic conflicts; the search for a new world order.
Prereq: Sr standing. Not open to students with credit for 400. GEC contemporary world course.

598 Seminars U 5
GEC third writing courses.

598.01 Senior Colloquium
The nature of historical judgment and interpretation: the roles of evidence, approach, and presuppositions.
Prereq: Sr history majors or written permission of instructor. Not open to students with credit for 598 or 598.02.

598.02 Proseminar in History
Designed to give undergraduate majors experience in the analysis of historical problems through a reading and research program.
H598.02 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: Sr standing in history or permission of instructor. Prereq for H598.02: honors history major or permission of instructor. Not open to students with credit for 598 or 598.01. H598.02 repeatable to a maximum of 15 cr hrs.

692 Workshop U G 1-8
Arr.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

General Prerequisites for Courses Numbered 700 and 800
Unless otherwise indicated, the prerequisites for 700- and 800-level courses are graduate standing or permission of instructor.

700 Studies in World History U G 5
Analysis of seminal works and concepts in the development of global-scaled integrative approaches to world history. Andrien, Finkley, and Hathaway.
Prereq: Course work at the 600 level or above in history of more than one civilization and permission of instructor. Repeatable to a maximum of 15 cr hrs.

706 Studies in Medieval History
706.01 Advanced Readings in Medieval History U G 5
Advanced reading course in sources and monographs on the principal issues and problems in medieval history, with a stress on bibliography. Gregory, Hanawalt, and Lynch.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

706.02 Late Medieval Paleography and Diplomatics U G 3
Cursive hands in literature and diplomas, 1200-1500; the development of chanceries; notaries, secretariats, and the science of diplomatics; exercises with facsimiles, slides, and microfilm.
Prereq: Permission of instructor.

708 Studies in Ancient History U G 5
An intensive study of selected problems and sources in ancient history (Near Eastern, Greek and/or Roman); readings in the primary and secondary materials. Balcer, Gregory, and Rosenberg.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

709 Methodology in Ancient History G 5
Introduction to the methodologies and bibliographies fundamental to graduate study of ancient Greek and Roman history through written papers and oral class reports. Minimum of 2 hrs weekly in class; other time in library research. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

710 Studies in Renaissance or Reformation History U G 5
Principal issues in the history of the Renaissance or the Reformation. Davis and Parker.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

712 Studies in Early Modern European History U G 5
Selected topics in Western European history of the 17th and 18th centuries. Van Kley.
Prereq: 612 or permission of instructor. Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

713 Colloquium in Early Modern Studies G 5
Readings seminar in topics in early modern (1550-1800) studies; history, literature, arts, and music. Creasey, Davis, Parker, and Van Kley.
Sp Qtr: 1 2-hr cl. Prereq: Grad standing in history, or permission of instructor. Repeatable to a maximum of 15 cr hrs. Required for grad students in early modern European history.

714 Studies in French History since 1815 U G 5
An intensive study, through reading and discussion, of standard works and recent scholarship, of the chief interpretative problems of modern French history. Rothney.
Prereq: Grad standing or by permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.

723 Studies in European International History G 5
Readings in and discussion of the history of European international relations from the late 19th century. Fink.
Repeatable to a maximum of 20 cr hrs.

726 Studies in Jewish History U G 5
An intensive study of selected issues in Jewish history; emphasis on problems posed by available source material and by current research in the area.
Prereq: Grad standing or by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

727 Studies in Islamic History U G 5
Selected topics in Islamic history and historiography. Dale, Findley, Hathaway and Sikainga.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 25 cr hrs.

730 Studies in 20th Century European Culture U G 5
Readings focusing on the cultural history of European Modernism (1870s-1950s). Fogel.
Su Qtr: 1 2-hr cl. Prereq: 513.02 or equiv or permission of instructor. Repeatable to a maximum of 10 cr hrs.

731 Studies in European History, 1914 to Present U G 5
Political, social, and economic developments; World Wars I and II; Communism, Nazism; present-day Europe; emphasis on methods of historical research and documentary analysis. -2rk.
Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 10 cr hrs.
732 Studies in German History U G 5
Exploration of selected topics of 19th and 20th century German history; emphasis on methods of historical research and documentary analysis. Beyercchen.
Prereq: 618 or equiv. Open only to grad students and by permission to srs majoring in history.

738 Studies in British History U G 5
Selected problems in British history since 1485; emphasis on different schools and interpretations, on methods of research, and an analysis of documents. Cressy, Garland, and Hanawalt.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

739 Comparative Constitutional Politics G 5
Compares constitutions and constitutionalism across cultures and through different disciplines with special attention to how people make claims to secure their rights and interests. Benedict.
Au Qtr. 1 2-hr cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for Comp Std 739. Cross-listed in Comparative Studies in the Humanities.

740 Studies in Russian and Soviet History U G 5
An intensive study of problems in selected periods of Russian history. Breyfogle, Hoffmann, and Levin.
Open only to grad students and by permission to srs majoring in history. Repeatable to a maximum of 15 cr hrs.

741 Studies in Eastern European History U G 5
Selected topics in modern Eastern European political, social, cultural, and intellectual history and historiography; theoretical and comparative emphasis. David-Fox and Levin.
Au Qtr. 1 2-hr cl. Prereq: 828 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

742 African Historiography and Methodology G 5
The study of sources, research methods, interpretations, and research trends in the field of African history. Robertson and Sikainga.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in AFam & ASI 742. Cross-listed in African-American and African Studies.

743 Studies in African History G 5
The study of the historical literature of Africa and various aspects of African history; topics vary. Robertson and Sikainga.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in AFam & ASI 743. Cross-listed in African-American and African Studies.

751 Studies in Latin American History U G 5
An intensive study of problems in selected periods of Latin American history. Anderson, Kibbock and Riley.
Prereq: Grad standing or permission of instructor for srs majoring in history or a cognate Latin American field. Repeatable to a maximum of 10 cr hrs.

752 Readings in African-American History U G 5
Readings in the evolution of black culture, economics and family life, race relations, and the emergence of class stratification within the black community. Russell and Shaw.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs including cr hrs in AFam & ASI 752. Cross-listed in African-American and African Studies.

753 Studies in the History of Religion G 5
An intensive readings course in some aspect of the history of religion; specific topic to be announced. Pestana.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

761 Studies in Mid-19th Century American History U G 5
An intensive study of selected topics with emphasis on historiography and bibliography. Benedict, Cashin, and Grimsley.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

765 Studies in Environmental History G 5
Analysis of a range of studies in environmental history; chronological and geographical focus will be shaped by students' interests. Roth.
Au Qtr. 1 2-hr cl. Prereq: Grad standing or permission of instructor to students with credit for 567.

767 Studies in Military History U G 5
Selected topics and periods in military history; emphasis on recent scholarship. Grimsley and Parker.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

768 Studies in Military Thought and Strategy U G 5
Analysis and comparison of the most influential writers on the theory and practice of warfare including Thucydides, Machiavelli, Clausewitz, Mahan, Fuller, and Liddell. Hart. Grimsley, Guilmartin, and Millett.
Prereq: 668 or equiv, and grad standing; or permission of instructor.

770 Studies in the History of American Foreign Policy U G 5
Studies in the main problems of American foreign policy with primary emphasis on basic literatures and selected primary materials. Hahn and Hogan.
Prereq: 670 and grad standing; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

771 Themes in Recent United States History G 5
Readings colloquium in selected themes in the history of the United States since 1877. Burnham.
Prereq: Grad standing. Repeatable to a maximum of 20 cr hrs.

772 Studies in Recent United States History U G 5
Readings in selected topics in American history since 1888. Burnham, Childs, Conn, Hartmann, Kerr, Stebbins, Van Tine, and Watts.
Prereq: Undergrads by permission of instructor. Repeatable to a maximum of 20 cr hrs.

773 Studies in Business History U G 5
Readings in the growth of capitalism, the rise of the modern corporation, government-business relations, business and society, and comparative business history. Blackford and Childs.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

774 History of American Law and Society U G 5
The history of American law and legal institutions, and their relationship to society, from colonial times to the present. Benedict.
Wi Qtr. 3 1 1/3-hr cl. Not open to students with credit for 585 or 687.

781 Studies in Women's History U G 5
An intensive reading course designed to prepare graduate students in the field of women's history; topic varies. Hartmann, Rupp, Russell, Shaw, Soland, and Wu.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

H783 Honors Research U 3-5
Informal conferences to allow full scope to the initiative of the student; a special topic is assigned and results are tested by papers and special examinations.
Prereq: 4th yr standing and 40 or cr hrs in history courses with a grade of A at least half of the history courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs required of candidates for the degree BA with distinction in history. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

784 Readings in American Constitutional and Legal History U G 5
An intensive investigation of standard works as well as influential and seminal articles in American constitutional and legal history. Benedict and Hall.
Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

785 Readings in American History to 1877 U G 5
Readings in the basic historical literature of colonial America and the United States through Reconstruction after the Civil War. Benedict, Cashin, Cornell, Grimsley, Newell, Pestana, and Roth.
Su, Au, Wi, Sp Qtr. 1 2-hr cl. Prereq: Grad standing or permission of instructor.

785.01 Readings in American Colonial History and the American Revolution
Readings in the basic historical literature of colonial and revolutionary America through 1783.

785.02 Readings in the History of the Early Republic
Readings in the basic historical literature of the early Republic, the Jacksonian era, and the market revolution from 1776 to 1850.

785.03 Readings in the History of the United States in the Civil War Era
Readings in the basic historical literature of the United States during the era of the Civil War and Reconstruction, from 1845 to 1877.

786 Colloquium in the Philosophy of History, Historiography, and the Historian's Skills U G 5
Colloquium on the principles of historical thought, historiography, and methods of historical research. Prereq: Grad standing in history or permission of instructor. Required of MA and PhD candidates in history.
785 Colloquium in the Philosophy of History, Historiography, and the Historian’s Skills II  U G 5
Continuation of 784 with emphasis on research methods.
Prereq: 784 or permission of instructor. Required at the discretion of the adviser.

788 Studies in American Urban History  U G 5
A detailed examination of several themes in the growth of urban America.
Prereq: 888 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

789 Topics in American History to 1877  U G 5
Readings in selected topics in American history to 1877. Benedict, Cashin, Cornell, Grimsley, Newell, Pestana, and Roth.
Su, Au, Wi, Sp Qtr. 1-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

791 Topics in History  G 1-5
The investigation of particular problems in various fields of history through individual studies.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Grad standing. Repeatable to a maximum of 20 cr hrs.

792 Interdepartmental Studies in the Humanities  U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

793 Introduction to Teaching College History  G 3
Basic ideas and techniques for effective teaching of college history; emphasis on classroom application.
Sp Qtr. 2 1/2-hr or 3 1/4-hr cl. Prereq: Grad standing in history. Required for history grad associates. This course is graded S/U.

796 Studies in Japanese History  U G 5
An intensive study, through reading and discussion, of major issues and recent scholarship in Japanese history. Bartholomew and Brown.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs.

798 Studies in Modern Chinese History  U G 5
Readings in documents and monographs; 19th and 20th century Chinese History. Reed.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs. Knowledge of Chinese desirable but not required.

800 Seminar in Renaissance and Reformation History  G 5
Research topic to be announced. Each subdivision repeatable to a maximum of 20 cr hrs.

800.01 Seminar in Renaissance and Reformation History I
Renaissance (Davis) and Reformation (Parker). This course is Progress ("P") graded. Credit will be awarded upon completion of 800.02.

800.02 Seminar in Renaissance and Reformation History II
Continuation of 800.01.

801 Seminar in German History  G 5
Research topic to be announced. Beyerchen.
Repeatable to a maximum of 15 cr hrs.

802 Seminar in Russian and Soviet History  G 5
Research topics to be announced. Each subdivision repeatable to a maximum of 18 cr hrs.

802.01 Seminar in Russian and East European History I
Brayfogle, David-Fox, Hoffmann, and Levin. This course is Progress ("P") graded. Credit will be awarded upon completion of 802.02.

802.02 Seminar in Russian and East European History II
Continuation of 802.01.

803 Seminar in British History  G 5
Research topic to be announced. Cressy, Garland, and Hanawalt.
Each subdivision repeatable to a maximum of 10 cr hrs.

803.01 Seminar in British History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 803.02.

803.02 Seminar in British History II
Continuation of 803.01.

804 Seminar in East Central European History  G 5
Research topic to be announced. Repeatable to a maximum of 15 cr hrs.

805 Seminar in French History  G 5
Rothney and Van Kley.
Repeatable to a maximum of 15 cr hrs.

807 Seminar in Medieval History  G 5
Research topic to be announced. Gregory, Hanawalt, and Lynch. Each subdivision repeatable to a maximum of 10 cr hrs.

807.01 Seminar in Medieval History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 807.02.

807.02 Seminar in Medieval History II
Continuation of 807.01.

808 Seminar in Ancient History  G 5
Topic to be announced. Balcer, Gregory, and Rosenthal.
Prereq: Permission of instructor. Each subdivision repeatable to a maximum of 30 cr hrs.

808.01 Seminar in Ancient History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 808.02.

808.02 Seminar in Ancient History II
Continuation of 808.01.

810 Seminar in World History  G 5
Research topic to be announced. Andrien, Findley, and Hathaway.
Prereq: 700 or permission of instructor. Each subdivision repeatable to a maximum of 10 cr hrs.

810.01 Seminar in World History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 810.02.

810.02 Seminar in World History II
Continuation of 810.01.

823 Seminar in European International History  G 5
Each subdivision repeatable to a maximum of 10 cr hrs.

823.01 Seminar in European International History I
Fink.
This course is Progress ("P") graded. Credit will be awarded upon completion of 823.02.

823.02 Seminar in European International History II
Continuation of 823.01.

827 Seminar in the History of the Islamic World  G 5
Research topic to be announced. Dale, Findley and Hathaway. Each subdivision repeatable to a maximum of 10 cr hrs.

827.01 Seminar in the History of the Islamic World I
This course is Progress ("P") graded. Credit will be awarded upon completion of 827.02.

827.02 Seminar in the History of the Islamic World II
Continuation of 827.01.

845 Seminar in East Asian History  G 5
Research topic to be announced. Bartholomew and Brown.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

850 Seminar in History  G 5
Research topic to be announced. Repeatable to a maximum of 15 cr hrs.

851 Seminar in Latin American History  G 5
Research topic to be announced. Andrien and Riley.
Prereq: Permission of instructor. Each subdivision repeatable to a maximum of 10 cr hrs.

851.01 Seminar in Latin American History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 851.02.

851.02 Seminar in Latin American History II
Continuation of 851.01.

862 Seminar in Jewish History  G 5
Research topic to be announced. Each subdivision is repeatable to a maximum of 10 cr hrs.

862.01 Seminar in Jewish History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 862.02.

862.02 Seminar in Jewish History II
Continuation of 862.01.

867 Seminar in Early American History  G 5
Research topic to be announced. Cornell, Newell, Pestana, and Roth. Each subdivision repeatable to a maximum of 10 cr hrs.
867.01 Seminar in Early American History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 867.02.

867.02 Seminar in Early American History II
Continuation of 867.01.

868 Seminar in 19th-Century American History G 5
Research topic to be announced. Benedict, Cashin, Roth, and Van Tine. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

868.01 Seminar in 19th Century American History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 868.02.

868.02 Seminar in 19th Century American History II
Continuation of 868.01.

869 Seminar in 20th-Century American History G 5
Research topic to be announced. Blackford, Burnham, Childs, Hartmann, Hogan, Kerr, Shaw, Stebenne, and Van Tine. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

869.01 Seminar in 20th Century American History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 869.02.

869.02 Seminar in 20th Century American History II
Continuation of 869.01.

870 Seminar in Selected Topics in American History G 5
Research topic to be announced. Benedict, Blackford, Burnham, Childs, Conn, Hahn, Hartmann, Hogan, Kerr, Shaw, Stebenne, and Van Tine. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

870.01 Seminar in Selected Topics in American History I
Topics will include business, institutional, and public policy (Blackford, Childs, Kerr) constitutional (Benedict), cultural (Burnham and Conn), African-American (Shaw), women (Hartmann and Wu), and labor history (Van Tine).

This course is Progress ("P") graded. Credit will be awarded upon completion of 870.02.

870.02 Seminar in Selected Topics in American History II
Continuation of 870.01.

871 Seminar in American Diplomatic History G 5
Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

871.01 Seminar in American Diplomatic History I
Hahn and Hogan.

This course is Progress ("P") graded. Credit will be awarded upon completion of 871.02.

871.02 Seminar in American Diplomatic History II
Continuation of 871.01.

873 Seminar in United States Military History G 5
Grimley and Millett.

Prereq: 868 or equiv. Repeatable to a maximum of 15 cr hrs.

875 Seminar in African-American History G 5
A two-quarter seminar designed to provide experience in the research and writing of a scholarly paper based on primary source material in African-American history. Shaw.

Prereq: Grad standing or permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

875.01 Seminar in African-American History I
W qr 1 3-4 hr cl. This course is Progress ("P") graded. Credit will be awarded upon completion of 875.02.

875.02 Seminar in African-American History II
Continuation of 875.01.

881 Seminar in Women's History G 5
Research topic to be announced. Hartmann, Robertson, Rupp, Shaw, and Wu.

Prereq: Permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

881.01 Seminar in Women's History I
This course is Progress ("P") graded. Credit will be awarded upon completion of 881.02.

881.02 Seminar in Women's History II
Continuation of 881.01.

890 Topical Research Seminar I G 5
Research topic to be announced.

Prereq: PhD standing or permission of instructor. Each decimal subdivision repeatable to a maximum of 10 cr hrs.

890.01 Topical Research Seminar I
A two-quarter seminar on topical themes. This course is Progress ("P") graded. Credit will be awarded upon completion of 890.02.

890.02 Topical Research Seminar II
Continuation of 890.01.

891 Topical Research Seminar G 5
A one-quarter seminar on topical themes.

Prereq: Permission of instructor.

899 Interdepartmental Seminar G 1-5
Two or more departments may collaborate in pressing seminars on subjects of mutual interest; topics to be announced. Repeatable by permission.

999 Research in History G Arr
Research for thesis or dissertation purposes only. This course is graded S/U.

History of Art

100 Hayes Hall, 108 North Oval Mall, 292-7461

210 Art of the Ancient World U 5
An investigation of the art of Western civilizations (Mesopotamia, Egypt, Greece, and the Roman and Byzantine empires) in its historical and cultural context.

Su, Au, Wi, Sp Qtr. 5 cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC arts and hums VPA course. VPA Admis Cond course.

211 Art of the Medieval and Renaissance Worlds U 5
An investigation of Medieval and Renaissance art in its historical and cultural context.

Su, Au, Wi, Sp Qtr. 5 cl. H211 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC arts and hums VPA course. VPA Admis Cond course.

212 Art of the Modern World U 5
An investigation of the art of Europe and America in its historical and cultural context from the 17th century to the present day.

Su, Au, Wi, Sp Qtrs. 5 cl. H212 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC arts and hums VPA course. VPA Admis Cond course.

213 Asian Art U 5

Au, Wi, Sp Qtrs. 5 cl. Prereq: 2nd yr standing or 1st yr standing with credit for 111, 210, 211, 212, 216, or 250. GEC arts and hums VPA course.

216 Introduction to African Art and Archaeology U 5
The art and archaeology of Africa with emphasis on the historic cultures of the Rock Art (8,000 B.C.E., Egypt (3000 B.C.), Nubia (500 B.C.), Igbo-Ukwu (695 A.D.), Ife (1200 A.D.), and Benin (1400-1900 A.D.)). Odla.

5 cl. GEC arts and hums VPA course. VPA Admis Cond course.

240 Classical Archaeology U 5
Introduction to the principles, methods, and history of archaeological investigation in the ancient Greek and Roman world, illustrated through a selection of major classical sites.

5 cl. Not open to students with credit for Classics 240 or History 240 or 306. Cross-listed in Classics as 240 and in History as 306. GEC arts and hums cultures and ideas course.

250 Great Monuments of Western Civilization U 5
Major buildings of Western civilization from antiquity to the present in their historical and cultural contexts. J. Morganstein.

Not open to students with credit for Arch 201, or any course from Arch 301-305 sequence, or more than one course from Hist Art 210-212 sequence. GEC arts and hums VPA course.

260 Introduction to World Cinema U 5
Chronological survey of the most influential and recognized film artists of the world.

2-3 hr. cl. GEC arts and hums VPA course.

294 Group Studies U 2-5
The investigation of particular problems in various fields of the history of art.

Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
History of Art 201

400 Women Artists of the Western World U 5
A chronological, sociohistorical examination of women artists and their contribution to western art.
5 cl. Prereq: 212 or permission of instructor.

415 Writing Seminar in the History of Art U 5
Training in writing a variety of assignments commonly undertaken by art historians.
2-2/hr cl. Prereq: Jr or sr standing in hist art. GEC third writing course.

450 An Introduction to Artistic Media and Techniques U 5
A survey of the major historical and contemporary artistic media and techniques. Meyer.
2-2/hr cl. Prereq: Hist art major or permission of instructor.

493 Individual Studies U 2-5
Individual study in some field of historical development; designed to allow the student to work on a problem of particular interest.
Su, Au, W, Sp Ctrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

505 Contemporary African Art: 1920 to Present U 5
5 cl. Prereq: 2nd yr standing. GEC arts and hums VPA course.

515 Renaissance Art in Italy U 5
A study of architecture, sculpture, and painting in Italy during the 14th, 15th, and 16th centuries. Haeger.
5 cl. Prereq: 2nd yr standing.

519 Great Masters of the 17th and 18th Centuries U 5
A study concentrating upon the individual careers of Caravaggio, Bernini, Rubens, Rembrandt, Velasquez, Poussin, Watteau, Tiepolo, and David. Haeger.
Prereq: 2nd yr standing. Not open to hist art majors or to students with credit for 631, 632, or 634. GEC arts and hums VPA course.

520 19th- and 20th-Century European Art U 5
European art from about 1800 to the present, with emphasis on the outstanding masters of painting and sculpture.
5 cl. Prereq: 2nd yr standing. Not open to hist art majors or to students with credit for 635 or 636. GEC arts and hums VPA course.

525 Medieval Art U 5
An introduction to the art of architecture and eastern and western Christendom from the 9th to the 13th century. J. Morganstein and Verzier.
5 cl. Prereq: 2nd yr standing. Not open to hist art majors.

530 American Art U 5
A study of architecture, painting, and sculpture in America. Grosserlose.
5 cl. H530 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 2nd yr standing. Not open to hist art majors or to students with credit for 637 or 638. GEC arts and hums VPA course.

550 Art of Paris U 5
Study of the painting, sculpture, buildings, and public and private spaces created in and for the people of the city of Paris.
5 cl. Prereq: 2nd yr standing.

576 The Arts of China U 5
An overview of the visual arts of China and their cultural context from prehistoric times to the modern era. Andrews and J. Huntington.
5 cl. Prereq: Soph standing or permission of instructor. GEC arts and hums VPA course.

600 Introduction to Contemporary Art Historical Theory U 5
Exploration of new/theoretical paradigms in art history. Melville.
2-2/hr cl.

601 Architecture of the Ancient Orient U 5
Survey of architecture of southwest Asia and the Nile Valley from the fourth millennium B.C. to the fourth century B.C. Crene.
5 cl. Prereq: 210, or Arch 301, 302, 303, 304, or 305, or permission of instructor. Not open to students with credit for 661 or 662.

602 Ancient Greek and Roman Architecture U 5
5 cl. Prereq: 210 or 10 cr hrs. of ancient history or classics, or permission of instructor. Not open to students with credit for Arch 301.

603 Architecture of the Middle Ages U 5
Major buildings of the Early Christian, Byzantine, Carolingian, Romanesque, and Gothic periods.
5 cl. Prereq: 210 or 211; or Arch 301, 303, 304, or 305; or permission of instructor. Not open to students with credit for 650 or Arch 302.

604+ Renaissance Architecture U 5
Survey of 15th- and 16th-century architecture in western Europe.
5 cl. Prereq: 211; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

605+ Baroque Architecture U 5
Survey of late 16th-, 17th-, and early 18th-century architecture in western Europe.
5 cl. Prereq: 212; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

606 American Architecture U 5
Survey of American architecture from the pre-colonial era to the present day.
5 cl. Prereq: 212; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

607 19th-Century European Architecture U 5
Survey of 19th-century European city planning; major architects and architectural styles; the revolution in building types and materials.
5 cl. Prereq: 212; or Arch 301, 302, 303, 304, or 305; or permission of instructor.

610 African Art and Archaeology I U 5
A study of the art and culture of west Africa with emphasis on stylistic, historic, and archaeological implications.
Odita.
5 cl. Prereq: 216 or permission of instructor.

611 African Art and Archaeology II U 5
The study of the art and culture of central and southern Africa with emphasis on stylistic, historic, and archaeological implications. Odita.
5 cl. Prereq: 216 or permission of instructor.

614 Comparative Study of African and European Art U 5
A critical study of the relationships between African and European art involving theory and practice. Odita.
5 cl. Prereq: Permission of instructor or Jr standing.

615 Contemporary Art of West Africa U 5
Painting and sculpture of Senegal, Sierra Leone, Liberia, Ivory Coast, Ghana, Dahomey, Nigeria, etc., focusing on history, style, and culture. Odita.
5 cl. Prereq: 216 or 505 or 610 or 614 or permission of instructor.

616 Contemporary Art of Central Africa U 5
Painting and sculpture of Cameroon, Gabon, Republic of Congo, Zaire, Zambia, Sudan, Uganda, etc., focusing on history, style, and culture. Odita.
5 cl. Prereq: 216 or 505 or 610 or 614 or permission of instructor.

617 Contemporary Art of East and Southern Africa U 5
Painting and sculpture of Ethiopia, Kenya, Tanzania, Mozambique, Southern Rhodesia, Malawi, South Africa, etc., focusing on history and style and culture. Odita.
5 cl. Prereq: 216 or 505 or 611 or 614 or permission of instructor.

618 Contemporary Art of North Africa U 5
20th-century painting, sculpture, and tapestries of Morocco, Algeria, Libya, United Arab Republic, Mauritania, Mali, Niger, and Chad, focusing on history, style, and culture. Odita.
5 cl. Prereq: 216 or 505 or 610 or 611 or 614 or permission of instructor.

621 Ancient Egyptian Art and Archaeology U 5
A specialized study of the architecture, sculpture, painting, and minor arts of ancient Egypt. Crane.
5 cl. Prereq: 210 or equiv with permission of instructor.

622 Art of Ancient Greece U 5
Survey of art in Greece from the early Iron Age to the end of the classical era (1100-323 B.C.). Fullerton.
5 cl. Prereq: Either 210, 10 cr hrs in classics, 10 cr hrs in ancient history, or permission of instructor.

623 Hellenistic and Roman Art U 5
Survey of art in the Mediterranean Basin during the Hellenistic and Roman Imperial areas (323 B.C.-ca. A.D. 350). Fullerton.
5 cl. Prereq: Either 210, 10 cr hrs in classics, 10 cr hrs in ancient history, or permission of instructor. Not open to students with credit for 623.01 or 623.02.

624* Early Christian and Byzantine Art U 5
The Christian art of the Mediterranean region in the 8th century and the art of the Byzantine Empire to the 15th century. J. Morganstein.
5 cl. Prereq: 210 or permission of instructor.
525* Romanesque and Gothic Art U G 5
The art of Western Europe from the Carolingian period to the 14th century. A. Morganstern, J. Morganstern, and Verzar.
5 cl. Prereq: 210 and 211 or permission of instructor.

567 Northern Renaissance Art U G 5
Art of the Low Countries, France and Germany from 1350 to 1550—with emphasis on Campin, Jan van Eyck, van der Weyden, van der Goes, Durer, Grunewald, Bosch, and Breughel. A. Morganstern.
5 cl. Prereq: 211 or permission of instructor.

568 Gothic towards Renaissance: The Fourteenth Century U G 5
Art of the Late Middle Ages in Western Europe in the social context, with new developments and major artists (Giotto, Duccio, Puccellia, Sluter, Parler) emphasized.
5 cl. Prereq: 211 or permission of instructor.

569 15th-Century Italian Art U G 5
A selective study of painting and sculpture of the Quattrocento. Richardson.
5 cl. Prereq: 211 or equiv with permission of instructor.

570 16th-Century Italian Art U G 5
A study of the major artists of the High Renaissance and Mannerist periods in Italy. Richardson.
5 cl. Prereq: 211 or equiv with permission of instructor.

570.01 Florentine and Roman Art of the 16th Century
570.02 Venetian and Northern Italian Art of the 16th Century

631 Baroque Art in Italy, France, and Spain U G 5
Painting, sculpture, and architecture in Italy, France, Spain, 1590-1700. Richardson.
5 cl. Prereq: 212 or equiv with permission of instructor.

632 Dutch Art of the Golden Age U G 5
Major artists, including Rembrandt and Vermeer, and developments of 17th century Dutch art examined with a focus on modes of representation and issues of interpretation. Haeger.
5 cl. Prereq: 212 or 519 or permission of instructor. Not open to students with credit for 633 prior to Au Qtr 1998.

633 Realism and Symbolism in Netherlands Art U G 5
Examination of the issues of interpretation and representation in context of paintings by artists such as Hals, Vermeer, de Hooch, Jan Steen, Ruysdael, and de Heem. Haeger.
5 cl. Prereq: 212 or 519.

634 Art of the 18th Century in Europe U G 5
The development of architecture, painting, and sculpture from the late Baroque and Rococo to Historicism. Meyer.
5 cl. Prereq: 212 or equiv with permission of instructor.

635 19th-Century European Art U G 5
5 cl. Prereq: 212 or permission of instructor. Not open to students with credit for 635.

635.01 Neo-Classicism and Romanticism: 1760-1830
Artistic trends in European art and architecture during the late 18th and 19th centuries. Meyer.

635.02 19th-Century European Art, 1848-1896
Realist, Impressionist, and Symbolist art in Europe and Great Britain, including developments in architecture.

636 20th-Century European Art U G 5
5 cl. Prereq: 212 or permission of instructor. Not open to students with credit for 635.

636.01 20th-Century European Art, 1896-1914

636.02 20th-Century European Art, 1914-1945
European art between the World Wars: Post-Cubism, Dada and Surrealism, Bauhaus and Constructivism, and Abstraction. Ficiman and Mudrak.

637 American Painting and Sculpture to 1900 U G 5
History of painting and sculpture in America from colonial times to the end of the 19th century. Groseclose.
5 cl. Prereq: 212 or permission of instructor, and English 110 or 111 or equiv.

638 Modern American Painting and Sculpture, 1900-1945 U G 5
American painting and sculpture from 1900 to 1945. Groseclose.
5 cl. Prereq: 212 or permission of instructor, and English 110 or 111 or equiv.

640 Contemporary Art since 1945 U G 5
Visual arts of Europe and the United States from 1945 to the present. Melville.
Prereq: 212 or permission of instructor.

644 Russian Art U G 5
A survey of Russian arts from the rise of Muscovy to glasnost; includes icon-painting, the imperial architecture of St. Peters burg and Socialist Realism. Mudrak.
5 cl. Prereq: 211 or 212 or permission of instructor. Not open to students with credit for 238.

645 Modern Russian Art U G 5
Avant-garde movements in Russian art of the 19th and early 20th centuries. Mudrak.
Prereq: 212 or permission of instructor.

646 Introduction to Film Theory U G 5
Study of historically important theories of film art. Green.
2 2-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Phonog 500.

647 Silent Cinema: 1895-1927 U G 5
A study of development of silent film as an international art form. Green.
2 2-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Phonog 510.

648 Classical Sound Cinema: 1927-1948 U G 5
A study of the development of film as an art form from the advent of sound to WW II. Green.
2 2-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Phonog 612.

649 Recent Cinema: 1948-Present U G 5
A study of film as an art form since WW II. Green.
2 2-hr cl. Prereq: 2nd yr standing. Not open to students with credit for Phonog 514.

651* Romanesque and Gothic Sculpture U G 5
Development of sculpture from the 11th through the 14th centuries, with emphasis on architectural programs, their contexts, iconography, and style. A. Morganstern and Verzar.
5 cl. Prereq: 210 or 211 or permission of instructor.

652 Medieval and Renaissance Manuscript Illumination U G 5
A chronological survey of medieval and Renaissance illuminated manuscripts in the West.
5 cl. Prereq: 210 or 211 or permission of instructor.

653 Avant-Garde and Documentary Cinema U G 5
General chronological survey of significant contributions to documentary and avant-garde cinema. Green
2 2-hr cl. Prereq: 2nd yr standing.

661* Art and Archaeology of the Ancient Near East U G 5
A specialized study of the art and archaeology of the ancient Near East focusing on the cultures of the Mesopotamian valley and surrounding areas. Crane.
5 cl. Prereq: 210 or 211 or 213 or permission of instructor.

663 Early Islamic Art U G 5
Introduction to the history of Islamic art and architecture from its formation through the classical age (i.e., from the 7th through the 13th centuries). Crane.
5 cl. Prereq: 210 or 211 or 213 or permission of instructor.

664 Later Islamic Art U G 5
Introduction to the history of Islamic art and architecture in the later period (14th through 18th centuries) including the Mongol, Timurid, Mamluk, Ottoman, Safavid, and Indo-Muslim art. Crane.
5 cl. Prereq: 210 or 211 or 213 or permission of instructor.

670 Buddhist Art: Theory and History U G 5
An analysis of Buddhism and its bearing on the art of India, Nepal, Tibet, China, and Japan. J. Huntington.
5 cl.

671* Art of India I U G 5
Art and architecture of India from prehistoric times through the Gupta period, ca. 500 C.E. stressing relationship to religious and cultural developments. S. Huntington.
5 cl. Prereq: English 110 or 111 or equiv.

672* Art of India II U G 5
Art and architecture of India from the Gupta period, ca. 500 C.E. to the Muslim period stressing relationship to religious and cultural developments. S. Huntington.
5 cl. Prereq: English 110 or 111 or equiv.
673 Art of Central Asia  U G 5
An analysis of the cross currents of style and iconography that constitute
the pre-Muslim art of Central Asia. J. Huntington.
5 cl.

674 Art of Nepal and Tibet  U G 5
A study and analysis of the major aspects of style, iconography, and
historical sequence as found in the arts of Nepal and Tibet. J. Huntington.
5 cl.

675 Art of India III  U G 5
A survey of architecture and painting after the Muslim conquest with
emphasis on intermixture of indigenous and foreign styles. S. Huntington.
Prereq: English 110 or 111 or equiv.

676 Hindu Iconography  U G 5
A survey of Hindu iconography emphasizing the development and meaning
of specific deities. S. Huntington.
5 cl.

677 Chinese Art  U G 5
5 cl. Prereq: English 110 or 111 or equiv.
677.01 Pre-Buddhist
Examination of archaeological finds in China, ca. 4000 B.C. to the
beginning of the 10th century A.D.; with emphasis on recent discoveries.
J. Huntington.
677.02 Buddhist
Examination of the Buddhist arts of China; with emphasis on religious
expression and content. J. Huntington.

678 Chinese Art: Painting  U G 5
5 cl. Prereq: 213 or permission of instructor. Not open to students with
credit for 678.

678.01 Chinese Painting to 1368
A survey of Chinese painting from the Han period through the Yuan
dynasty, with emphasis on style, subject matter, and cultural context.
Andrews.

678.02 Chinese Painting from 1368 to the Present
A survey of Chinese painting from the Ming dynasty to the present, with
emphasis on style, subject matter, and cultural context. Andrews.

681 Japanese Art: Proto-Historic and Buddhist  U G 5
Selected topics in the history of Japanese art of the Proto-Historic period
and the Buddhist religion. J. Huntington.
Prereq: English 110 or 111 or equiv.

682 Japanese Art: Painting and Prints  U G 5
Selected topics in the history of Japanese pictorial art and related subjects.
Andrews.
Prereq: English 110 or 111 or equiv.

690 Selected Topics  U G 5
Topics to be announced.
5 cl. Each decimal subdivision repeatable to a maximum of 15 cr hrs.
690.01 Western Art
690.02 Asian and Non-Western Art

693 Individual Studies  U G 2-5
Advanced study for students in specialized programs.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a
maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies  U G 1-5
Group studies for students in specialized programs.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a
maximum of 15 cr hrs.

697 Study at a Foreign Institution  U G 1-15
An opportunity for students to study at a foreign institution and receive
Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson.
Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees
and any fees in excess of Ohio State tuition, as well as all travel and
subsistence costs.

698 Study Tour  U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary;
contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours
only.
698.01 Domestic
698.02 Foreign

704 Studies in African Art and Archaeology  U G 3-5
Studies in African art emphasizing problem identification, concept
organization, library research, and individual criticism. Odita.
3-5 cl. Prereq: 610 or 611 or permission of instructor. Repeatable to a
maximum of 15 cr hrs.

705 Studies in Contemporary African Art  U G 3-5
Introduction to research in 20th-century African art. Odita.
Art. Prereq: 505 or 615 or 616 or 617 or 618 or permission of instructor.
Repeatable to a maximum of 15 cr hrs.

710 Studies in Art Theory and Criticism  U G 3-5
Investigations of theories of art and their applications. Green and Melville.
Not open to students with credit for 839. Repeatable to a maximum of
15 cr hrs.

715 Historical Conceptual Bases of Art History  U G 5
Investigation of intellectual and historical foundations of modern art
history. Melville.
2.2-hr cl or 4 cl. Prereq: 20 cr hrs in hist art.

717 Studies in Medieval Art  U G 3-5
Selected problems in architecture, painting, sculpture, and the minor arts
from the Early Christian through the Byzantine and Gothic periods. A.
Morganstern, J. Morganstern, and Wetzer.
Prereq: 624 or 625 or permission of instructor. Repeatable to a maximum of
15 cr hrs.

718 Studies in Italian Renaissance  U G 3-5
Selected problems in painting, sculpture, and architecture of Italy in the
14th, 15th, and 16th centuries. Richardson.
3-5 cl. Prereq: 515 or 620 or 630, or permission of instructor. Repeatable to
a maximum of 15 cr hrs.

720 Studies in Near Eastern Art and Archaeology  U G 3-5
Selected problems in the art and archaeology of the Near East. Crane.
Prereq: 621 or 661 or 663, or equiv with permission of instructor. Repeatable
to a maximum of 15 cr hrs.

722 Studies in Ancient Greek and Roman Art  U G 3-5
Selected problems in the art of Ancient Greece and Rome, 11th century
B.C. to 4th century A.D. Fullerton.
3-5 cl. Prereq: 622 or 623 or permission of instructor. Repeatable to a
maximum of 15 cr hrs.

724 Studies in Northern Baroque Art  U G 3-5
Selected problems in the painting, sculpture, and architecture of Belgium,
Holland, Germany, and France in the 17th and 18th centuries. Haeger.
3-5 cl. Prereq: 632. Repeatable to a maximum of 15 cr hrs.

725 Studies in Italian Baroque Art  U G 3-5
Selected problems in the painting, sculpture, and architecture of the 17th
century. Richardson.
3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr
hrs.

726 Studies in Spanish Art  U G 3-5
Selected studies in the architecture, sculpture, painting, and minor arts
of Spain. Richardson.
3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr
hrs.

734 Studies in 18th Century European Art  U G 5
Selected problems in the painting, sculpture, architecture, graphic and
decorative arts of the 18th century in Europe. Meyer.
1 4-hr cl or 2 2.2-hr cl. Prereq: Permission of instructor. Repeatable to a
maximum of 15 cr hrs.

737 Studies in Modern Art  U G 3-5
Selected studies in the art of the United States or modern Europe.
3-5 cl. Prereq: 635 or 636 or 637 or 638, or permission of instructor.
Repeatable to a maximum of 15 cr hrs.

745 Studies in Russian Art  U G 3-5
Selected problems in the painting, sculpture, and architecture of Russia.
Mudakk.
Prereq: 645 or permission of instructor. Repeatable to a maximum of 15 cr
hrs.

747 Studies in Late Gothic and Northern Renaissance Art  U G 3-5
Selected problems in the art of the Low Countries, Germany, and France
from the 14th through the 16th centuries. A. Morganstern.
3-5 cl. Prereq: 627 or permission of instructor. Repeatable to a maximum of
15 cr hrs.
Selected Topics in Cinema Studies **U G 5**
Intensive studies of specific movements, artists, periods and theories of cinema. Green.
2-2 hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Studies in Buddhist Art **U G 3-5**
Introduction to research in Buddhist art and iconography. J. Huntington.
3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Studies in the Art of India **U G 3-5**
Research problems in the art of India at an introductory level. S. Huntington.
Repeatable to a maximum of 35 cr hrs.

Studies in Inner Asian Art **U G 3-5**
Introduction to research in Inner Asian history of art. J. Huntington.
Prereq: 673 or 674 or 677 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Studies in Chinese Art **U G 3-5**
Prereq: 677 or 678 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Studies in Japanese Art **U G 3-5**
Prereq: 681 or 682 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Honors Research **U G 3-5**
A program of study arranged for each student, with individual conferences, reports, and honors thesis.
Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the hist art courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA or BFA with distinction in his art. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

Individual Studies **U G 2-5**
Advanced study for students in specialized programs.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

Problems in African Art and Archaeology **G 5**
Research techniques with emphasis on scholarly methods involving extensive search for available source materials on African art. Odita.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Problems in Contemporary African Art **G 5**
Advanced study and specialized research on major topical problems in 20th-century African art. Odita.
5 cl. Prereq: Two 600-level courses in contemporary African art or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Museum Problems **G 3-5**
An introduction to professional work in museums. Repeatable to a maximum of 15 cr hrs.

Problems in Ancient Art **G 3-5**
Advanced study and specialized research on major topical problems in ancient art. Crane and Fullerton.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Problems in Northern Baroque Art **G 3-5**
Advanced study and specialized research on major topical problems in Northern Baroque Art. Haeger.
3-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Problems in American Art **G 2-5**
Grosedeck.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Individual Studies **G 1-5**
Doctoral students may register for individual study in areas not normally covered by courses.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

Group Studies **G 1-5**
Group studies for students in specialized programs.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Seminar in Medieval Art **G 2-5**
A. Morangstein, J. Morganstom, and Verzar.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Seminar in Italian Renaissance Art **G 2-5**
Richardson.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Seminar in Modern Art **G 2-5**
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Seminar in Buddhist Art **G 3-5**
Advanced research in Buddhist Iconographic problems. J. Huntington.
Prereq: Two of the following: 670, 671, 673, 677, 681, and 770; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Seminar in the Art of India **G 2-5**
Research problems in the art of India. S. Huntington.
Repeatable to a maximum of 15 cr hrs.

Seminar in Chinese Art **G 3-5**
Prereq: 677 or 678 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Seminar in Japanese Art **G 3-5**
Prereq: 681 or 682 or 780 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Research in History of Art **G Arr**
Research for thesis and dissertation purposes only.
Au, Wi, Sp Qtrs. This course is graded S/U.

Home Economics Education
(See Family and Consumer Sciences Education)

Honors, University
University Honors Center, 220 West 12th Avenue, 292-3135

University Honors Proseminar **U 3-5**
Designed to foster an understanding of concepts, issues, and problems which transcend the boundaries of a single discipline; topic varies.
Au, Wi, Sp Qtrs. Arr. Prereq: Fresh or soph standing in an honors program and/or permission of instructor. Repeatable to a maximum of 15 cr hrs.

University Honors Seminar **U 3-5**
Designed to foster appreciation, understanding and/or problem-solving skills related to concepts, issues, or problems that transcend the boundaries of a single discipline; topic varies.
Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing in an honors program. Repeatable to a maximum of 15 hrs with permission of University Honors director.

Horticulture
(See Horticulture and Crop Science)

Horticulture and Crop Science
202 Kottman Hall, 2021 Coffey Road, 292-2001

Introduction to Horticulture **U 4**
Guide to the applied practices associated with using and raising horticultural plants. Shockey.
Su, Wi Qtrs. 3 cl, 1-2 hr lab. Not open to majors in landscape horticulture or to students with credit for Hort 150.
200 Crop Science U 5
Study of environmental, genetic, and cultural factors which influence crop plant productivity. McNamah.
Au, Wi Qtrs. 4 cr. 1 2-hr. lab. Prereq: Biology 101 or 113. Not open to students with credit for Agronomy 200. This course is available for EM credit. NS Adams Cond course. vieH 342/LAH course.

210 Landscape Horticulture U 2
Historical development of landscape horticulture, components of the profession, and contemporary issues. Jourdan.
Au Qtr. 1 2-hr. cl. Not open to students with credit for Hort 210.

232 Landscape Maintenance U 4
Management of landscape plantings with special emphasis on transplanting, mulching, nutrition, pest control, pruning, physiological disorders, and diagnosing plant problems. Jourdan.
Wi, Su Qtrs. 2 2-hr cl. Not open to students with credit for Hort 232 or Nat Res 232. Cross-listed in Natural Resources.

234 Landscape Plants U 5
Identification, usage, and maintenance of landscape plants, including trees, shrubs, vines, groundcovers, ferns, grasses, annuals, and perennials. Jourdan.
Sp Qtr. 4 cl. 1 2-hr. lab. Not open to majors in landscape horticulture or to students with credit for Hort 234, 452, 458 or HAC 435, 436.

260 Data Analysis and Interpretation for Decision Making U 5
Basic concepts of probability and statistics applied to the interpretation of quantitative data. St. Martin.

294 Group Studies U 1-5
Special group studies in the areas of crop science, landscape horticulture, and turf science.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr. hrs.

300 General Plant Biology U 5
Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity. Knee.
Au, Sp Qtrs. 3 cl. 2 2-hr labs. Prereq: Biology 101 or 113. Not open to students with credit for Hort 300 or Plant Bio 300. Cross-listed in Plant Biology. BER/GEC/LAH course.

310 Control of Crop Development U 4
Practices in crop and turf science as related to the physiological manipulation of crops directly or indirectly through modification of the environment. Bennett.
Wi Qtr. 3 cl. 1 2-hr. lab. Prereq: 200 or 300 or Agronomy 200 or Hort 300. Not open to students with credit for Hort 310.

320 Plant Propagation: Manipulation of Plant Reproduction U 4
Techniques, equipment, and facilities involved in sexual and asexual multiplication of plants. Struve.
Au Qtr. 3 cl. 1 2-hr. lab. Prereq: 300 or Hort 300. Not open to students with credit for Hort 320.

322 Micropropagation and Tissue Culture U 3
Introduction to micropropagation and tissue culture techniques and principles, using ornamental, fruit, vegetable and agronomic crops as models. Miller.
Wi Qtr. 1 cl. 1 4-hr. lab. Prereq: Gen Chem T131 and Gen Biol T120 or T125 or permission of instructor. Course is offered only at the Agricultural Technical Institute and the OARDC in Wooster, OH.

325 Crop Genetic Resources U 4
Past, present, and future issues in germplasm conservation, ownership, and use for major food and ornamental crops. Includes practical uses of genetics in crop improvement.
Sp Qtr. 2 2-hr cl. Prereq: 200 or 300 or Agronomy 200 or Hort/Plant Bio 300.

401 The Horticulture and Crop Science Industries and Organizations U 1
Field visits to industries and organizations where theory associated with Horticulture and Crop Science is practiced.
Au Qtr. 2 all-day field trips and 2 2-hr. discussion. Prereq: Permission of instructor. Each divisional subdivision repeatable to a maximum of 3 cr. hrs. This course is graded S/U.

401.01 The Floriculture Industry
McMahon.

401.02 Environmental Horticulture Organizations in Ohio
Struve.
206 Horticulture and Crop Science

489 Internship Experience U 1-5
Ten or more weeks of supervised practical experience in an approved enterprise. Seminar required. Shockely.
Su, Au, Wi, Sp Qtrs. 2 cl. Open only to department majors. Not open to students with credit for 489.01. Repeatable to a maximum of 10 cr. hrs. Class time TBA quarterly. Each student must present a 20 min seminar.

494 Group Studies U 1-5
Special group studies in the areas of crop science, landscape horticulture, and turf science.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr. hrs.

510 Crop Production in Developing Countries U 5
Fundamental studies of field and plantation crops in tropical and subtropical countries with emphasis on means and techniques for obtaining production increases. Pratt.
Wi Qtr. 5 cl. Prereq: 200 or Agronomy 200 and Agronomy 240 or Soil Sci 300.01 or equiv. Not open to students with credit for Agronomy 510.

521 Greenhouse Environment Control U 5
Principles and practices of greenhouse operation including construction, heating, cooling, light, temperature, ventilation, moisture, soils, and nutrition. Metzger.
Au Qtr. 4 cl. 1.2-hr lab. Prereq: 300 or Hort 300; and 320 or Hort 320. Not open to students with credit for Hort 521.

522 Commercial Production of Floriculture Crops U 5
Physiological principles and environmental factors involving photoperiod, temperature, nutrition, moisture, soil, carbon dioxide, and chemical growth regulators involved in the commercial production of selected plants. McMahon.
Wi Qtr. 4 cl. 1.2-hr lab. Prereq: 521 or Hort 521. Not open to students with credit for Hort 522.

533 Management of Commercial Nursery Operations U 5
Detailed consideration of factors involving commercial nursery site selection, production, harvesting, and marketing of woody ornamentals and related products. Struve.
Wi Qtr. 4 cl. 5-hr lab. Prereq: 320 or Hort 320. Not open to students with credit for Hort 533.

560 Computers in Horticulture Management U 4
Develops an understanding of the applications of computer software to the areas of production planning, control, and electronic marketing for horticultural enterprises. Rhodus.
Wi Qtr. 2.2-hr cl. 1-hr lab. Not open to students with credit for Hort 560.

570 Turfgrass Management and Science U 4
A study of cultural practices and environmental factors affecting the maintenance of quality turf. Darnelovenger.
Wi Qtr. 2 cl. 1.2-hr lab. Prereq: 470 or Agronomy 413. Not open to students with credit for Agronomy 570.

591 Workshop in Horticulture and Crop Science U 3
Study of selected topics in horticulture and crop science appropriate for teachers and extension agents.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 5 or hrs of previous course work in Horticulture and Crop Science or equiv. Not open to students with credit for Agronomy 591. Repeatable to a maximum of 12 cr. hrs.

593 Individual Studies U 1-5
Special studies in the areas of crop science, landscape horticulture, and turf science.
Su, Au, Wi, Sp Qtrs. Prereq: 2.5 GPA and written permission of instructor. Repeatable to a maximum of 5 cr. hrs. This course is graded S/U.

597 Issues in Biotechnology U 5
Issues pertaining to the means and methods, products, prospects, safety, regulation, ethics, and societal effects of biotechnology. Lagrimini.
Au Qtr. 5 cl. Prereq: Biology 101 or 113, or Plant Bio 101 or equiv.; and standing. Not open to students with credit for Hort 597. GEC/CLAR course.

598 Turfgrass Science Seminar U G 1
Academic and industry experts present information and lead discussion on current issues facing the turfgrass industry.
Sp Qtr. 1 cl. Prereq: Jr or sr standing in turf science, crop science, landscape horticulture, or permission of instructor. Repeatable to a maximum of 2 cr. hrs.

600 Studies in Quality, Ethics, and the Global Environment U 5
Principles and practices of contemporary horticultural management with emphasis on global environments, social responsibility, and company-wide quality. Rhodus.
Au Qtr. 3 1.1-hr cl. Prereq: 489 or Hort 489 or equiv, second writing course, and 10 cr. hrs at 400 level or above in horticulture or agriculture and crop science. Not open to students with credit for Agronomy 600 or Hort 600. GEC course.

601 Issues in Crop and Turf Science U 5
Technical and business issues in contemporary crop production industries and their implications for the ecological, political, social and economic concerns of the global community. McMahon and Scheeren.
Au, Wi Qtrs. 2.2-hr cl. 1 cl. Prereq: 200 or Agronomy 200 and Agronomy 240 or Soil Sci 300.01, second writing course, and standing in Agronomy or Turf Science. Not open to students with credit for Agronomy 600. GEC course.

602 Field Crop Ecology U G 3
A study of the agroecosystem, the ecology of managed agricultural systems; the interrelationships of climates, soils, and organisms in crop production. Loux.
Wi Qtr. 3 cl. Prereq: 10 or hrs of crops courses and 5 or hrs of soils courses at the 300 level or higher. Not open to students with credit for Agronomy 602.

604 Research Methods in Plant Science U 4
2.5-hr cl. 2.3-hr labs. Prereq: 300 or Biology 114 or Plant Bio 300 or 436 or grad standing or permission of instructor. Not open to students with credit for these courses in Plant Bio or Plant Phyt. Cross-listed in Plant Biology and Plant Pathology.

604.01 Whole Plant
Introduction to scientific skills and modern research methods for the study of plants at the whole plant level.
Au Qtr.

604.02 Cell and Tissue Level
Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.
Wi Qtr.

604.03 Molecular Level
Introduction to scientific skills and modern research methods for the study of plants at the molecular level.
Sp Qtr.

605* Advanced Vegetable Crops Production and Physiology U 5
A physiological study of the principal vegetable crops used for processing and fresh market; cultural practices are also considered. Bennett.
Wi Qtr (Even years). 3 1.1-hr cl. Prereq: 450 or Hort 450. Not open to students with credit for Hort 605.

609** Postharvest Principles and Practice U 4
The principles of postharvest physiology illustrated through individual research and current literature on a horticultural crop. Knee.
Au Qtr (even years). 3 cl. 1.2-hr lab. Prereq: 300 or Hort 300. Not open to students with credit for Hort 609 or 609.815.

510 Weed Control in Horticultural Crops U 4
A study of environmental and cultural factors which influence weed development in horticultural crops and a review of the principles of chemical and mechanical weed control.
Au Qtr. 3 cl. 1.2-hr lab. Prereq: 300 Hort 300. Not open to students with credit for Hort 610.

612 Principles of Grassland Management U 5
Plant-animal requirements and correlations in the maintenance, management, and utilization of meadows, pastures, and ranges.
Sp Qtr. 5 cl. and 1 field trip arr per qtr. Not open to students with credit for Agronomy 612.

620 Plant Cell Transformation U 4
Principles of plant tissue culture as related to biotechnology and agronomic and horticultural crop improvement. Finer.
Au Qtr. 2 1-hr cl. 2 2-hr labs. Prereq: Mol Gen 500 and Plant Bio 630, or equiv, or permission of instructor. Not open to students with credit for Agronomy 620 or Hort 620. Odd years taught in Wooster; even years taught in Columbus.

621 Crop Physiology and Production U 4
A study of physiological processes in agronomic and horticultural crops and how they relate to cultural practices and production ecosystems. Metzger.
Au Qtr. 4 cl. Prereq: Biology 113 or equiv. Not open to students with credit for Agronomy 621.

625* Crop Breeding U 4
Principles of genetics and methods of plant breeding applied to the improvement of crops and the ultimate development of superior varieties. Campbell.
Sp Qtr (Odd years). 3 cl. 1.2-hr lab. Prereq: 230 or 300 or Agronomy 200 or Hort 300 or Plant Bio 300; and Mol Gen 140 or 500. Not open to students with credit for Agronomy 625.
635* The Plant Genome U G 3
Study of chromosomal and genomic structure, function, and organization in higher plants. Prereq: Genet 505A. Not open to students with credit for Agronomy 635.

636* Mineral Nutrition of Plants U G 3
Process of uptake, transport, and metabolism of mineral nutrients, with emphasis on nitrogen, and on process at the tissue and cellular level. Streeter.
Sp Qtr (Odd years), 2.5-2 hr. lab. Prereq: Biochem 511, Plant Bio 436 or 630, Plant Bio 643 recommended. Not open to students with credit for Agronomy 636 or Plant Bio 636.

660 Soil Microbiology U G 3
Diversity of soil microorganisms, their habitats in soil, cycling of major nutrients, inputs to agriculture of xenobiotics and heavy metals, and microbial colonization of plant roots. Bauer.
Sp Qtr. 3 cl, 2-2 hr. labs. Prereq: Soil Sci 442, Microbiol 509, and Chem 251. Not open to students with credit for Agronomy 660.

665 Environmental Microbiology U G 3
The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds. Tuovinen.
Sp Qtr. 3 cl, Prereq: Chem 251 and Microbiol 509 or 520. Not open to students with credit for Agronomy 665 or Microbiol 665. Cross-listed in Microbiology.

683 Honors Project U 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr H590.01, enrollment in honors program, and permission of honors supervisor. Repeatable to a maximum of 10 cr or hrs as H683 or in combination with 293, 593, H593, H599, 693, or H693. This course is graded S/U.

693 Individual Studies U G 1-5
Special problems in crop science, landscape horticulture or turf science, not included in regular courses and involving library, laboratory, or field studies.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 CPRI and written permission of instructor. Repeatable to a maximum of 10 cr or hrs. This course is graded S/U.

694 Group Studies U G 1-5
Special group studies in the areas of crop science, landscape horticulture, and turf science.
Su, Au, Wi, Sp Qtrs. Prereq: Sr or grad standing. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Written permission of program coordinator. Repeatable to a maximum of 45 cr hrs. Decimal substitutions not permitted. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as other travel and subsistence costs.

697.01 The Constructed Landscape I: British and American Contrasts U G 5
Preparation for study of constructed landscapes in their geographic and social contexts at Myerscough College England.
Sp Qtr. 4 2-2 hr. cl, 2-2 hr. labs.

697.02 The Constructed Landscape II: Evolution of English Landscapes U G 5
Study of the factors that have shaped landscape horticulture in Britain.
Sp Qtr. Arr.

697.03 The Constructed Landscape III: Landscape Industry and Operations in Britain U G 5
Study of the structure and operations of landscape industries in Britain.
Sp Qtr. Arr.

761 Secondary Products of Higher Plants U G 4
The biochemistry of secondary products unique to higher plants with emphasis on phenolics, waxes, flavonoids, terpenoids, alkaloids, and related compounds. R. Miller.
Sp Qtr. 2-2 hr. cl. Prereq: Biochem 511, Plant Bio 631 or equiv. Not open to students with credit for Hort 761.

804 Seminar G 1
Streeter and Still.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

814 Physiology of Horticultural Plants G 5
The application of physiological concepts to horticultural plant situations; review of applicable literature.
Au Qtr. 5 cl, Prereq: Plant Bio 630 and 631. Not open to students with credit for Hort 814.

822 Physiological and Biochemical Aspects of Herbicides G 5
Herbicide absorption, course, fate, and mode of action in plants; persistence and fate in soils. Harrison.
Wi Qtr (Odd years), 4 cl, 1 2-hr lab. Prereq: Biochem 631 and Plant Bio 630 or 631. Not open to students with credit for Agronomy 822.

825 Advanced Plant Breeding G 3
Theory and methods of plant improvement; statistical genetics, methods for self- and cross-fertilizing crops, chromosomal manipulation.
Sp Qtr (Even years), 2.5-2 hr. cl. Prereq: 625 or Agronomy 625; and Mol Gen 650. Not open to students for credit for Agronomy 825.

830 Current Topics in Horticulture and Crop Science G 2
Readings from the current literature will be examined in detail for both technical and conceptual content.
Su, Au, Wi, Sp Qtrs. 1 cl, 1 2-hr discussion. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.

832 Plant-Bacteria Interactions G 5
Bacterial pathogens and symbionts affecting plant health and productivity; molecular, cellular, and environmental determinants of plant-microbe interactions; and successful biological control. Bauer and Coplin.
Sp Qtr. (Odd years), 3-2 hr. cl. Prereq: Plant Bio 630 or Microbiol 520, Mol Gen 501 or Microbiol 581 and Biochem 511; or permission of instructor. Not open to students with credit for Agronomy 832 or Plant Path 832. Cross-listed in Plant Pathology.

887 Techniques of Experimental Design G 5
A study of experimental designs and their application to agricultural research. St. Martin.
Wi Qtr. 5 cl. Prereq: Mol Gen 650 or Stat 528, and 10 or cr hrs of Horticulture and Crop Science or related subjects at the 400 level or above. Not open to students with credit for Agronomy 887.

894 Group Studies G 1-5
Advanced topics in horticulture and crop science.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

993 Individual Studies G 1-5
Students may select special problems not included in regular courses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

999 Research G Arr
Research for thesis or dissertation research only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Human Development and Family Science

289 Introductory Field Experience
Directed observation/participation in prekindergarten programs or community agencies.
Prereq: 2.00 CPRI; written permission of instructor. Open only to students in HDFS or UVC Pre-HDFS CAP code. Repeatable to a maximum of 6 cr hrs. Application must be filed in dept office the quarter preceding the experience.

289.01 Introductory Prekindergarten Field Experience U 3
Directed observation/participation in prekindergarten programs.
Au, Wi, Sp Qtrs. 2-4 hr observations; 1 hr cr. This course is graded S/U.

294 Group Studies U 2, 3 or 5
Selected topics in human development and family science.
Prereq: Open to students who meet dept’s stated prerequisites. Repeatable to a maximum of 10 cr hrs.

360 Family Development U 5
Dynamics of family interaction over the life cycle; emphasis on developmental, social, and cultural influences on the family experience.
Au, Wi. Sp Qtrs. 5 cl, 1 hr ar. Prereq: Social 101 or Rug Soc 105. BER/GECLCAR course.

361 Introduction to Child Development U 5
Study of the nature, nurture, and development of children from conception through the beginning school years.
Au, Wi, Sp Qtrs. 3 cl, 2 hrs ar. BER/GECLCAR course.

363 Infant-Toddler Development U 5
Examination of the behavior and development of children and issues of care throughout the periods of infancy and toddlerhood.
Au, Sp Qtrs. 2-2 hr cl, 2 hr ar. Prereq: 361, and 361 or 364.
Human Development and Family Science

364 Life Span Human Development U 4
Survey of human development across the life span directed toward an applied understanding of the individual and forces that shape development.
Au, Wi, Sp Qtrs. 2 1/2 hr cl, 1 hr arr. BER/GEC/LAR course.

365 Practicum in Infant-Toddler Child Care U 5
Participation in infant-toddler laboratory as a student teacher.
Su, Wi, Sp Qtrs. 8 hrs/wk; Practicum: 1 1/2-hr seminar. Prereq: 363 and 364. Open to Human Development and Family Science majors only.

390 Human Ecology Foundations U 3
The family in the human ecosystem, including human development, textile and clothing products, well-being of individuals and families, and management of resources.
Su, Au, Wi, Sp Qtrs. 1 2/3-hr cr. Prereq: Enrollment in College of Human Ecology or Pre-HEC/Co-Pre-HDFS.

451 Guidance of Young Children in Groups U 3
Application of principles of development to guidance of children in groups; modification of experiences for age level, ability, group, and individual needs.
Au, Wi Qtrs. 3 cl. Prereq: 361 or 364 or Psych 550 or Ed-T&P 460 or Edu T&L 460.

464 Constructing a Curriculum Model for Young Children U 3
In-depth examination of the Campbell Hall curriculum model from theory to practice.
Su, Wi, Sp Qtrs. 3 cl. Prereq: 461; concour: 465.

465 Day Care Practicum
Participation in the day care center as a student teacher.
Su, Wi, Sp Qtrs. Prereq: 391 or 364; and 461 or written permission of instructor. Pre-register one quarter in advance in dept office.

465.01 Preschool/Day Care Practicum U 5
Application of theory included in 461 and 464. 24-hr lab, 1 1/2-hr cr. Concour: 464. Open only to HDFs child development option students.

465.02 Child and Family Studies Practicum U 3
Application of theory included in 461.

465.03 Group Care Practicum U 2
4-hr lab, 1 cl. Open to HDFs majors; open to other Ohio State students with permission of instructor.

466 Seminar: Human Service Organizations U 3
Application of principles of family development to program planning; discussion of family needs and design of techniques to assess needs and ways to provide services.
Au, Sp Qtrs. 2 cl, 1 hr arr. Prereq: 360. Open only to dept majors in family studies option.

468 Individual and Family Helping Skills U 3
The study of various strategies and techniques used in working with individuals and families in the context of family service organizations.
Au, Wi Qtrs. 1 3-hr cr. Prereq: 360 or 364.

560 Advanced Family Development U 3
Explores family development and family relations across the life span, primarily from a family systems perspective.
Au, Sp Qtrs. 2 1/2-hr cl. Prereq: 360 and jr/sr standing.

565 Supervised Preschool/Day Care Teaching U 10, 12, or 15
Guided participation of students in the responsibilities and activities of preschool and day care teachers.
Au, Wi, Sp Qtrs. Full-time teacher's schedule. Prereq: 464, 465.01, 4th yr standing in child development option, 2.50 CPRH, and written permission of instructor. Dept application must be filed 2 yrs in advance.

570* Adolescent Development: A Biopsychosocial Perspective U 3
Comprehensive overview of the biological, psychological, and social development of the adolescent.
Wi Qtr. 2 1/2 hr cl. Prereq: 360, 361, 364 or Psych 550, and jr/sr standing.

589 Field Work
Planned professional experience with children, youth, or adults in a community agency setting.
Au, Wi, Sp Qtrs. Prereq: 466, 4th yr standing, 2.50 CPRH, and written permission of instructor. Dept application must be filed 2 yrs in advance. Repeatable to a maximum of 10 cr hrs. Students must enroll in 2 consecutive qtr of field work. Open only to dept majors in family studies option.

589.01 Introduction to Field Work U 5
First quarter planned participation in community agency learning roles and responsibilities.
Au, Wi Qtrs. 12 hrs/week at human service agency, 1 hr cl.

589.02 Advanced Field Work U 5
Second quarter planned participation in community agency with increased responsibility for program development and evaluation.
Wi, Sp Qtrs. 12 hrs/week at human service agency, 1 hr cl. Prereq: 589.01.

590 Practicum in Human Development and Family Science Research U 1-5
Provides students with opportunity to work individually with faculty member on research project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing; Psych 220 or equivalent, and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

593 Individual Studies U 1-5
Problems in various phases of human development and family science chosen for individual study.
Su, Au, Wi, Sp Qtrs. 1 or more conf. HHS50 (honors) may be available to students enrolled in college honors program or eligible for enrollment.
Prereq: Written permission of instructor and completion of individual study plan form. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

595 Professional Development U 2
The professional: performance, role in society, position, security, involvement in organizations, and continuing development.
Su, Wi Qtrs. 1 1/2-hr cl. Prereq: 4th year standing in India and completion of a minimum of 20 cr hrs in major in dept.

662 Multicultural Programming for Young Children U 3
Utilizing a variety of teaching and learning methods, students begin to develop an understanding of and appreciation for the diversity and how it relates to programming for young children.
Sp Qtr.

663 Infant Development U 3
Infant development during first two years of life with special consideration of bases of support for provision of effective care.
Wi Qtr. 1 2-hr cl, 1 2-hr lab arr. Prereq: 363, Psych 654, and Social 434.

665 Parenting U 3
Identification and examination of the theoretical approaches applicable to child rearing in families; emphasis on developing practical skills for working with parents and children.
Su, Au Qtrs. 2 1/2-hr cl. Prereq: 360 or Social 430, 361, 364, or Psych 550, or equiv with written permission of instructor; or graduate status.

668 Children and Their Families Under Stress U 3
Examination of normative and developmental stressors and crises that impact on the development of children; implications for practitioners drawn from conceptual frameworks and recent research.
Au, Wi, Sp Qtrs. 2 1/2-hr cl. Prereq: 360, 364, and jr or higher standing.

667 Administration of Agencies Serving Children and Families U 3
Study of the administration of day care centers and other family service agencies; topics include program objectives, regulations, program development and evaluation, staff development and training, and budget and funding.
Au, Qtr. 1 1/2-hr cl, 1 hr arr. Prereq: 465.01 cr 465.02 or equiv and written permission of instructor.

669 Comparing Program Philosophies for Young Children U 3
Exploration of a variety of philosophies and resultant practices in caring for and educating young children in day care and pre-school situations.
Sp Qtr. 2 1/2-hr cl. Prereq: 464, and 465.01 or 465.02, or permission of instructor, and sr or higher standing.

670 Family and Informal Support Systems of the Aged U 3
Consideration of issues, perspectives, and problems pertinent to support systems of aged persons, including adult children, siblings, other kin, friends, and others in the community.
Sp, Su Qtrs. 1 1/2-hr cl. Prereq: 15 hrs in behavioral or social sciences, or permission of instructor.

589 Practicum in Human Development and Family Science U 3-5
An opportunity for putting professional research and theory into practice by teaching, administrative, and agency experiences under supervision in university or agency settings.
Prereq: 3rd or 4th yr standing, 2.50 CPRH, and written permission of instructor. Application must be approved by instructor the quarter preceding registration.

689.01 Advanced Child Development Practicum
Special advanced supervised teaching experience with children ages three to five; emphasis on analysis of relationships among teacher behaviors, child characteristics, environmental factors, and learning outcomes.
Su, Wi, Sp Qtrs. Arr. Prereq: 465.01, 465.32, 465.03, or permission of instructor. Repeatable to a maximum of 8 cr hrs.
689.02 Curriculum Planning and Interdisciplinary Strategies for Serving Moderately, Severely, and Profoundly Delayed Young Children
Practicum experience for students who are interested in working with young, developmentally delayed children and their families in an educational setting. Wi, Sp Qtr. Arr. Prereq. 261 or equv, and Psych 671 or Edu 543 or Edu 546 or Edu PAES 650. Repeatable to a maximum of 10 cr. hrs. This course is graded S/U.

689.03 Advanced Family Services Practicum
Special field experience in family service agencies for students with unique interests, such as hospitalized children or the elderly. Su, Au, Wi, Sp Qtr. Arr. Prereq. 360 and 466. Repeatable to a maximum of 10 cr. hrs. This course is graded S/U.

689.04 Advanced Infant-Toddler Practicum
Advanced supervised teaching experience with children born to three years of age. Su, Au, Wi, Sp Qtrs. 2 hrs lab time weekly/credit hr enrolled. Prereq. 365 or permission of instructor. Repeatable to a maximum of 8 cr. hrs.

694 Group Studies U G 2, 3, or 5
Selected topics in human development and family science. Prereq. Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr. hrs.

695 Seminar in Child and Family Studies U G 3
Review, interpretation, and evaluation of current literature and research in defined areas. Su, Au, Wi, Sp Qtrs. 1 2/3 hr cr. Prereq. 360, 361, and ar gr or grad standing. Repeatable to a maximum of 6 cr. hrs.

695.01 Special Topics in Child Development
Special topics seminar with a content focus on child development.

695.02 Special Topics in Family Development
Special topics seminar with a content focus on family development.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq. Written permission of dept chairperson. Repeatable to a maximum of 45 cr. hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq. Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

701 Issues and Problems in Human Development and Family Science U G 1
Issues and problems in research, teaching, and professional development in fields of human development and family science. Au, Wi, Sp Qtrs. 1 cr. Jr, sr, or grad standing in hdfs or permission of instructor.

701.02 Program Development
Current issues and trends and methods in the interdisciplinary curricula and instructional resources in the field of human development and family science.

701.03 Research
Current research trends and methods in the interdisciplinary field of human development and family science.

717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities.

717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
Wi Qtr. 1 3-hr cr. Not open to students with credit in 702.01 in any cross-listed areas.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues
Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.
Su Qtr. 1 1-hr cr. Not open to students with credit in 702.02 in any cross-listed areas.

760 Human Development and Family Science Research Process Analysis U G 3
Historical overview of research methods and related conceptual issues relevant to study of human development and family science, creative approaches to research problems. Au Qtr. 1 1 1/2-hr cr. Prereq. 361 or 363, Psych 550, and Socio 434 or equv with written permission of instructor.

764 Foundations and Issues in Family Science U G 4
Theory, research, and methods used to study family development; individual and family developmental tasks over the life span; personal and social context of family development. Au Qtr. 1 1-hr cr. Prereq. 360 and 364, or equv with written permission of instructor.

765 Advanced Child Development U G 4
Growth and development of children through adolescence with emphasis on maturation patterns and individual differences.
Wi Qtr. 1 1/2-hr cr. 2 hrs arr. Prereq. 360, and 361 or Psych 550, or equv with written permission of instructor.

770 Professional Issues in Marital and Family Therapy U G 3
A practical introduction to the central issues and resources in professional development, including personal growth, legal responsibilities, regulation, ethics, and special areas of practice.
Au Qtr. 3 1/2-hr. cl.

771 Cultural Diversity in American Families U G 3
Designed to facilitate an understanding of cultural variations among American families with attention given to theoretical, methodological, and intervention issues.
Wi Qtr. 1 1/2-hr cr. Prereq. 560 or 764 or equv or permission of instructor.

775 Individual Studies U G 1-5
Problems in various phases of human development and family science. Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq. Written permission of instructor. Repeatable to a maximum of 15 cr. hrs. This course is graded S/U.

797 Interdepartmental Seminar U G 2-4
Two or more departments may collaborate in presenting seminars in subjects of mutual interests; topics to be announced. Repeatable to a maximum of 6 cr hrs with permission.

810 Divorce and Remarriage U G 3
Analysis of research and theory pertaining to the process of marital disruption, adjustment, and remarriage.
Wi Qtr. 1 1-hr cr. Prereq. 764 and 765 or equv and permission of instructor, 6 cr hrs in research methods, design, or statistics.

820 Family Theory U G 3
Explores major theoretical perspectives of the field of family science as well as strategies for developing theory.
Wi, Sp Qtrs. 1 1/2-hr cr. Prereq. 764.

840 Seminars in Adolescence U G 3
A series of seminars focusing on human development during adolescence, processes involved in development during this period, the social and family contexts of development.
Prereq. 760, 764, 765; or permission of instructor. Repeatable to a maximum of 9 cr. hrs. One series of will be offered each year.

840.01 Adolescents and Their Families
A multidisciplinary analysis of theory and research bearing on the topic of changing parent-child relationships during the period when children are adolescents.
Au Qtr.

840.02 Adolescence: The Differentiation Process and the Social Context
Comprehensive overview of the differentiation construct's utilization in family theory, research, and clinical practice.
Sp Qtr. 1 1/2-hr cr.

840.03 Adolescence: The Individuation Process in the Context of the Family
A review and analysis of research on the process of individuation during the developmental period of adolescence in the context of the family.
Wi Qtr. 1 1-hr cr.

850 Measurement and Assessment in the Study of Children and Families U G 3
Examination of measurement techniques, instruments, and methods which are used by family researchers to assess children and families.
Au Qtr. 1 1/2-hr cr. Prereq. 760 and one other research course or permission of instructor.
Practicum in Research G 1-5
Participation in the research process under the supervision of a faculty member.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 20 cr hrs. A maximum of 5 hrs of 851 may be included in student’s program of study. This course is graded S/U.

Practicum in Teaching G 1-5
Supervised college teaching experience for department graduate students.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

The Family: Middle and Later Years G 3
The interrelationship and adjustment of families with emphasis on the middle and later years of the life cycle.
Su, Sp Qtrs. 1 2½-hr cl. Prereq: 764 or equiv with written permission of instructor; and 6 cr hrs in research methods, design, or stat.

Seminar in Human Development and Family Science G 3
Topics to be announced.
Su, Au, Wi, Sp Qtrs. 1 2½-hr cl. Prereq: Grad standing in human ec or written permission of instructor; and 6 or hrs in research methods, design or stats. Repeatable to a maximum of 24 cr hrs.

Infant Caregiving Contexts G 3
Review and critical analysis of recent theoretical and research literature relevant to the design and evaluation of infant care settings.
Sp Qtr. 1 2½-hr cl. Prereq: 863 or equiv with permission of instructor, and 6 or hrs in research methods, design, or stat.

Contemporary Issues in Group Experiences for Young Children G 3
Identification and examination of current practices in group processes for children under five; emphasis on current issues, relevant research and theory as related to curriculum design.
Sp Qtr. 1 2½-hr cl. Prereq: 15 or hrs of child development and/or child psychology, supervised student teaching or experience in nursery schools or day care centers, and 3 or hrs in research methods, design, or stat.

Play and Development G 3
Examination of research on play, including development, special populations, and ways of encouraging and studying play.
Au Qtr. 1 2½-hr cl. Prereq: 765 or equiv grad course in human development or play, or permission of instructor.

Current Trends and Issues in Human Development and Family Science G 3
An analysis and assessment of the empirical and theoretical literature on selected family science topics.
1 2½-hr cl. Prereq: 764 and 765 or equiv; 6 or hrs in research methods, design or stats, or permission of instructor. Repeatable to a maximum of 12 cr hrs.

Men in Families
A developmental analysis and assessment of the empirical and theoretical literature on male role performance in family systems with implications derived for research and social policy.
Sp Qtr.

Women in Families
An analysis and assessment of the theoretical and empirical literature on women's roles in family systems.
Sp, Su Qtr.

Family Systems Assessment G 4
A survey of issues and techniques used in assessment of families for purposes of research and practice, including issues and design for family therapy research.
Wi Qtr. 3 cl. Prereq: 760 and 770.

Foundations of Marital and Family Therapy G 4
Overview and development of key theories of marriage and family therapy.
Au Qtr. 1 3½-hr cl. Prereq: Permission of instructor.

Family Therapy I G 4
An emphasis on the theoretical orientation of the structural, strategic, MRI, and Milian theories to family therapy.
Wi Qtr. 1 3½-hr cl. Prereq: 873 or permission of instructor.

Family Therapy II G 4
An emphasis on the theoretical orientation of the intergenerational, behavioral, experimental and solution-focused approaches to family therapy.
Sp Qtr. 1 3½-hr cl. Prereq: 873 or permission of instructor.

Marital Therapy Theory G 4
An emphasis on theoretical approaches, intervention techniques, and basic issues or problems of application for marital therapy.
Sp Qtr. 3 cl. Prereq: 874 or 875.

Supervision of Marriage and Family Therapy G 4
Preparation of Marriage and Family Therapy doctoral students to provide supervision of therapy.
Wi Qtr. 1 2-hr cl.; 4 hrs, practicum. Prereq: 889 and enrollment in Marriage and Family Therapy Program, or permission of instructor.

Seminar in Marital and Family Therapy G 4
Topics to be announced.
Su, Wi, Sp Qtrs. 3½-hr cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

Research in Marital and Family Therapy G 4
Explore major design, measurement and analysis strategies for conducting and understanding marital and family therapy research.
Sp Qtr. 1 3½-hr cl. Prereq: 6 hrs of measurement, design or analysis.

Practicum in Marital and Family Therapy G 1-3
Supervised practice in marital and family assessment and intervention in the department's marital and family therapy clinic.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 20 cr hrs.

Group Studies G 2, 3, or 5
Selected topics in human development and family science.
Prereq: 6 cr hrs in research methods, design or stat; and stated prereqs for specific topics. Repeatable to a maximum of 10 cr hrs.

Supervised Field Experience in Family Therapy G 1-3
Supervised practice in marital and family assessment and intervention in an agency setting.
1-5 cl; 15 contact hrs per week. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

Individual Studies G 1-5
Problems in various phases of human development and family science.
Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

Research: Thesis G Arr
Research for master's thesis.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Research: Dissertation G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Human Ecology
350 Campbell Hall, 1787 Neil Avenue, 292-6761
896 Scholarly Writing in Human Ecology G 2
Students draft a journal article or research grant proposal, receive advice from faculty on specific techniques, and present their work to peers in this course.
1 2-hr cl. Prereq: One course in research or statistics or the equiv. Concur: One credit of 793. Open only to majors in human ecology. This course is graded S/U.

Human Nutrition and Food Management
347 Campbell Hall, 1787 Neil Avenue, 292-4485
210 The Science of Human Nutrition U 5
Basic principles of biological science involving interactions between nutrients and physiological processes with emphasis on implications for human health.
Au, Wi, Sp Qtrs. 5 cl. Prereq: Biology 101 or equiv. Not open to students with credit for 310. BER/GE/C/CLAR course.
294 Group Studies U 2, 3 or 5
Selected topics in human nutrition and food management.
Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.
310 Fundamentals of Human Nutrition U 5
Nutrient and food energy needs of the human biological system throughout the life cycle with consideration of socio-psychological factors. Au, Wi, Sp Qtrs. 5 cl. H310 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Biology 101, 110, 112 or equiv; Chem 101 or 121 and Chem 102 or 179. This course is available for EM credit.

313 Food in Different Cultures U 3
Food practices of selected peoples of the world with consideration of the existing social, cultural, and economic conditions. 3 cl. Prereq: 10 cr hrs of social science.

314 Fundamentals of Food U 5
Application of chemical and physical principles to food preparation and use. Wi Qtr. 3 cl. 2-2-2 hr lab. Prereq: 10 cr hrs of chem.

350 Principles of Food Production U 5
A study of food science and volume food service equipment as related to food production in quantity. Au, Sp Qtrs. 3 cl, 3 hr lab. Prereq: Chem 101 and 102, or 121 and 122.

370 Food Purchasing, Menu Planning, and Cost Control U 5
A study of the impact of the menu, standardized recipe, forecast, and food purchasing on cost control and food quality. An overview of records related to cost control. Au Qtr. 5 cl. Prereq: 350, hosp mgmt or dietetics or fcs ed food service pre-maj, 2.0 CPHR.

400 Beverage Management U 3
Discussion of the varieties, merchandising, and management control of alcoholic and non-alcoholic beverages served in the hospitality industry. Wi Qtr. 2 1/2-hr cl. Prereq: 370.

413 Food Management for Families U 3
Nutritional, aesthetic, economic, and social aspects of planning, purchasing, preparing, and serving food to family groups at different income levels. 2 cl, 1-2-hr lab. Prereq: 310 and 314 or 350.

450 Equipment, Layout, and Sanitation U 5
A study of the principles of (a) equipment selection and layout design related to food production, assembly, service, and dishwashing or disposal; (b) design as related to the aesthetic qualities of dining and related areas; (c) sanitation as related to equipment selection, food production, food service, food storage, and food service regulations. Wi Qtr. 5 cl. Prereq: 350, hosp mgmt or dietetics or fcs ed food service major, 2.0 CPHR.

451 Hospitality Facilities Management U 5
Survey and management of infrastructural systems within hospitality properties; safety and emergency systems are also considered. 2 2 1/2-hr cl. Prereq: 450.

460 Personnel and Organization U 5
Integration of principles of management and learning in the management of hospitality operations; emphasis on management of human resources. Sp Qtr. 5 cl. Prereq: 350, Bus-MHR 701.

470 Food Quality Analysis and Control U 3
Principles of sensory evaluation and the attributes of food quality as related to physical and chemical properties. 2 cl, 2 hr lab. Prereq: 350, hosp mgmt or dietetics or fcs ed food service major, 2.0 CPHR.

480 Marketing and Merchandising U 5
Application of the principles of marketing to the hospitality industries. Wi Qtr. 5 cl. Prereq: Bus-Mkg 650.

504 Principles of Education in Dietetics U 3
Principles of education related to individuals and groups based on knowledge of nutrition, communication skills, recognition of socioeconimic influences, and familiarity with community resources. Wi Qtr. 2 1 1/2-hr cl. Prereq: 310 and 314.

506 Nutrition: The Life Cycle U 3
Food and nutrient needs throughout various phases of the life cycle. Sp Qtr. 3 cl. Prereq: 310, 504 or equiv with permission of instructor. Not open to students with credit for 408.

550 Hospitality Management: Introductory Internship U 5
Planned experience under supervision, in various segments of the hospitality industry. Su, Au, Wi, Sp Qtrs. Prereq: 350, 370, 460; Actng 211; 2.00 CPHR, and permission of instructor. Internship application must be filed 2 qtrs in advance.

560 Hotel Systems U 5
Examines functions and procedures in hotels. Traditional and modern accounting systems-flow of data for sales, allowances, receivables, cash receipt, and disbursement. Housekeeping management and sanitation. Au Qtr. 3 1/2-hr cl. Prereq: Acct&MIS 211, 212; OprnSf 101 or 200 or 201 or 211.

570 Hospitality Management: Advanced Internship U 12
Planned experience in an entry-level supervisory role within the hospitality industry. Su, Au, Wi, Sp Qtrs. Prereq: 550, permission of instructor, 4th yr standing, and 2.00 CPHR. Internship application must be filed in dept 2 qtrs in advance.

580 Current Issues in the Hospitality Industry U 3
Overview of regulations and current issues in the hospitality industries. Sp Qtr. Prereq: Sr standing and permission of instructor.

589 Field Work U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Sr standing in human ec; 2.25 CPHR; written permission of instructor; Acct&MIS 211; Econ 200; and Humn Ntr 350, 370, and 460. Registration 2 qtr before scheduling. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

593 Individual Studies U 1-5
Problems in various phases of human nutrition and food management chosen for individual study. Su, Au, Wi, Sp Qtrs. 1 or more conf. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. Prereq: Minimum of 6 cr hrs in subject matter of problem with cumulative point-hour ratio of 2.70 or written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded SU.

595 Professional Development U 2
Professionals, ethics, and career alternatives in dietetics, food, or nutrition professions: professional organizations, continuing education, and development; skills to seek and obtain employment. Au Qtr. 1 1/2-hr cl. Prereq: Jr standing in humn ntr or permission of instructor.

601 Nutritional Concepts in Nursing Practice U 3
Consideration of the role of nutrition in preventive health care and various alterations in health with emphasis on the role of the nurse. Au Qtr. 1 1/2-hr cl. Prereq: 310 or equiv and human physiology. Not open to students with credit for 612.01 or 612.02.

610 Advanced Human Nutrition U 5
Interrelationships of nutrition and human biological functions. Au Qtr. 5 cl. Prereq: 310, Biochem 211, and Zoology 232.

612 Nutrition Therapy U 4
Current practices of nutritional therapy with emphasis on the biochemical and physiological rationale for dietary modifications. Students required to take 612.01 and 612.02 in sequence. Open only to dept. majors, except by permission of instructor. 612.01 Nutrition Therapy I Wi Qtr. 3 cl, 1 1/2-hr lab. Prereq: 504, 506 and 610.

612 Nutrition Therapy II Sp Qtr. 3 cl, 1 1/2-hr lab. Prereq: 612.01.

615 Food Theory and Application U 5
Application of experimental methods to problems involved in preparation of foods. Sp Qtr. 3 cl, 3-4 hr lab. Prereq: 350, Biochem 211, Chem 231 or 241 and 249.

690 Workshop U 4
Full time for 3 wks. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

694 Group Studies U 1-5
Selected topics in human nutrition and food management. Prereq: Open to students who meet dept's stated prereqs. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution U 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.
Human Nutrition and Food Management

698.01 Domestic
698.02 Foreign

704 Nutrition Programs and Services in the Community
\[\text{UG 3}\]
Exploration of food and nutrition programs emphasizing goals, target audiences, funding, legislation, and identification of community, state, and national programs.
Au Qtr. 3 cl, 3-hr lab. Prereq: S04 and S06.

705 Nutrition and Exercise
\[\text{UG 3}\]
Theoretical and applied framework for making dietary decisions for exercising populations.
Su Qtr. 2 cl, 3-hr lab. Prereq: Advanced coursework in nutrition, physiology and biochemistry, and permission of instructor.

706 Practicum in Nutrition and Exercise
\[\text{UG 1}\]
Development of practical skills employed in solving nutritional problems of exercising populations.
Su Qtr. 3-hr lab. Concur: 705.

708 Nutrition of Persons with Developmental Disabilities
\[\text{UG 3}\]
A problem-oriented approach to nutrition of the developmentally disabled population.
Su Qtr. 2 cl, 2 hrs lab. Prereq: S12.01 and S12.02 or equiv.

710 Physiological Basis for Food Utilization
\[\text{UG 5}\]
Advanced concepts of human nutrition integrating physiological, biochemical, and nutritional functions relevant to food utilization.
Wi Qtr. 3 1/2-hr cl. Prereq: 610 or equiv.

711 Nutrition: History
\[\text{UG 3}\]
Persons, discoveries, and methods in the evolution of nutrition as a science and a factor in the control of human welfare.
Au Qtr. 3 cl. Prereq: 610 or equiv.

713* Advanced Food Theory and Application
\[\text{UG 3}\]
Food theories applied to individual investigations in food preparation, preservation, and storage in the home and volume food service.
Su Qtr. 1 2-hr cl, 1 3-hr lab. Prereq: 615 or equiv.

717 Nisonger Centers Courses in Mental Retardation and Developmental Disabilities
\[\text{UG 3}\]
Focus on interdisciplinary topics in mental retardation and developmental disabilities.

717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
Wi Qtr. 1 3-hr cl. Not open to students with credit in 717.01 in any cross-listed areas.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues
Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.
Su Qtr. 1 3-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

717.03 Developmental Disabilities
Focus on the most pertinent scientific and societal issues of developmental disabilities.
Au Qtr. 1 3-hr cl. Not open to students with credit in 717.03 in any of the cross-listed areas. Cross-listed in Allied Medicine, Education: Physical Activity and Educational Services, Psychology, and Social Work.

730 Advanced Food Service Systems Management: Operational Integration
\[\text{UG 3}\]
Current practice and research in management of food service systems.
Sp Qtr. 1 2-hr cl. Prereq: 460.

793 Individual Studies
\[\text{UG 2, 3, or 5}\]
Problems in various phases of human nutrition and food management chosen for individual study.
Su, Au, Wi, Sp Qtrs. 1 or more cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

797 Interdepartmental Seminar
\[\text{UG 2-4}\]
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.
Repeatable to a maximum of 6 or hrs and by permission.

802 Seminar in Nutrition and Food Management
\[\text{UG 3}\]
Prereq: Advanced course work in seminar topic. Repeatable to a maximum of 15 or hrs.

802.01 Food Management
Su Qtr.

802.02* Advanced Topics in Human Nutrition and Food Management
Su Qtr.

802.03* Food
Wi Qtr.

802.04 Human Nutrition
Au Qtr.

810 Nutritional Assessment
\[\text{UG 3}\]
Evaluation of methods used to assess human nutritional status.
Sp Qtr. 2 cl, 3 hrs lab. Prereq: 710.

816 Recent Developments in Food
\[\text{UG 3}\]
Analysis of selected topics in food with application to current issues.
Wi Qtr. 1 2-hr cl. Prereq: 615 or equiv.

830 Advanced Studies in Nutrition
\[\text{UG 3}\]
Su, Au, Wi, Sp Qtrs. 3 or 4 cl. Prereq: 610 or Animl Sc S30 or Pltiry Sc S30 or Animl Sc S61 or Dairy Sc S61 or Home Ec S61; Fd Sci Nu 761 and 762 and 10 grad crs in physiol. Not open to students with credit for Animl Sc 830, Dairy Sc 830 or Pltiry Sc 830. Cross-listed in Animal Science, Dairy Science, Food Science and Nutrition, and Poultry Science.

830.01 Energy
Snook.
Wi Qtr.

830.02 Minerals
Malahan.
Au Qtr.

830.03 Proteins and Amino Acids
Sp Qtr.

830.04 Vitamins
Liburn, Mitchell, and Smith.
Wi Qtr.

830.05 Lipids
Allred.
Sp Qtr.

830.08 Carbohydrates
Roehrig.
Au Qtr.

832* Recent Developments in Food Service Systems Management
\[\text{UG 3}\]
Analysis of selected topics in food service systems management with application to current issues.
Su Qtr. 1 2-hr cl. Prereq: 460 and experience in food service management. Repeatable to a maximum of 15 or hrs.

894 Group Studies
\[\text{UG 2, 3, or 5}\]
Selected topics in human nutrition and food management.
Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 cr hrs.

895 Seminar
\[\text{UG 1}\]
Presentations by students, faculty, and visiting scientists with critical discussion of issues in human nutrition.
Au, Wi Qtrs. Arr. Repeatable to a maximum of 10 or hrs. This course is graded S/U.

898 Interdepartmental Seminar in Nutrition and Food Technology
\[\text{UG 3}\]
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

899 Interdepartmental Seminar
\[\text{UG 1-5}\]
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

993 Individual Studies
\[\text{UG 2, 3, or 5}\]
Problems in various phases of human nutrition and food management chosen for individual study.
Su, Au, Wi, Sp Qtrs. 1 or more cl. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

998 Research: Thesis
\[\text{UG 1-5}\]
Research for master's thesis.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Research: Dissertation G Arr
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Humanities, College of

186 University Hall, 230 North Oval Mall, 282-1882

294 Group Studies U 1-6
Interdisciplinary study under the direct auspices of the College of Humanities involving materials of an interdepartmental or intercollegiate nature. H294 (honors) may be available to students enrolled in an honors program. Prereq: Permission of Instructor. Repeatable to a maximum of 18 cr hrs.

489 Research Internship in the Humanities U 1-5
Intensive research experience in a humanities discipline; individual work within a faculty research project; students work as research assistants. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of Instructor. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

994 Group Studies U G 1-6
Interdisciplinary study under the direct auspices of the College of Humanities involving materials of an interdepartmental or intercollegiate nature. Prereq: Permission of Instructor. Repeatable to a maximum of 18 cr hrs.

Industrial and Systems Engineering

210 Baker Systems Engineering Building, 1971 Neil Avenue, 292-6239

311 Manufacturing Engineering U 3
Fundamentals and interrelationships of the principal manufacturing processes; principles and characteristics illustrated with related laboratory demonstrations. Au, Wi, Sp Qtrs. 2 1/2-3 hr, 1 1/2 hr lab. Prereq: 2nd yr standing in engineering or written permission of instructor. Safety glasses must be worn in laboratory.

406 Industrial Quality Control U 3
Application of probability theory, statistics, and control theory to problems and product inspection and process control; economic evaluation of quality control techniques. Wi Qtr. 2 cr. Prereq: 513.

485 Practical Experience in an Industrial Organization U 2
To be obtained in some engineering or industrial organization; prior adviser approval and final report required. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Majors in ind eng only. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

500 Introduction to Industrial and Systems Engineering U 3
Introduction to the industrial engineering curriculum and to the profession; technical writing; completion is required prior to beginning advanced portion of the major. Au, Sp Qtrs. 2 1/2-2 hr, Prereq or concr: Chem 125, Econ 200, Eng Mech 420, Math 415 and 568, Physics 125, Psych 100, Stat 428 or 429 and English 367 or equiv. Open to ind eng majors only. GEC 3rd writing course.

503 Work Physiology and Biomechanics in Work Design U 3
Investigations of the physiological and biomechanical aspects of work design; anthropometry, biomechanical analysis, physio-control models, and work rest cycles applied to the workplace. Au, Sp Qtrs. 2 cr, 1-2 hr lab. Prereq: Stat 425 and 426, and jr standing in ind eng or permission of chairperson.

504 Engineering Economic Analysis U 3
Economic analysis of engineering projects and methods of operation; the analysis of public investments, and introduction to the analysis of engineering decisions. Su, Au, Wi, Sp Qtrs. 3 cr. Prereq: 3rd yr standing or concr with 500 or written permission of instructor; and a minimum cumulative pt-hr ratio of 2.00.

509 Statistical Process Control U 3
Emphasizes the application of statistical methods to product design, process design and operation, and quality engineering. Au, Sp Qtrs. 2 1/2-3 hr, Prereq: 500; Stat 427 and 428, or equiv.

511 Introduction to Manufacturing Processes U 3
Fundamentals and analysis of principal manufacturing processes and relationships between process variables and product properties. Au Qtr. 3 cr. Prereq: 311 recommended; Eng Mech 215 or 220 or 420 or 449.

521 Operations Research I: Simulation of Production Systems U 5
Emphasizes the creation and use of simulation models for the design and evaluation of production systems. Au, Wi Qtrs. 3 cr, 1-3 hr lab, Prereq: 500; Stat 427 and 428, or equiv.

522 Operations Research II: Fundamentals of Linear Optimization with Applications U 3
Emphasizes the formulation, solution, and analysis of linear models to optimize the design of production and service systems and other engineering applications. Au, Wi Qtrs. 3 cr, 1 1/2 hr lab, Arr. Prereq: 500; Math 254, 415, and 568. Computer facilities with Excel.

523 Operations Research III: Fundamentals of Nonlinear Optimization with Applications U 3
Emphasizes the formulation, solution, and analysis of non-linear models to optimize the design of production and service systems and other engineering applications. Wi, Sp Qtrs. 3 cr, 1 1/2 hr lab, Arr. Prereq: 522; Math 254, 415, 568. Not open to students with credit for 549. Computer facilities with Excel.

531 Production Systems I: Systems Design U 4
This course develops the knowledge and skills to design production systems and their workplace components. Wi, Sp Qtrs. 4 cr, 1 1/2 hr lab. Prereq: 500.

532 Production Systems II: Facilities Design U 4
Principles and practices in the design and analysis of process flows, facilities layouts, and material handling systems for production, service, and storage systems. Au, Sp Qtrs. 3 cr, 1 1/2 hr lab. Prereq: 521, 522, 523, 531.

533 Production Systems III: Production Control System Design and Implementation U 4
Principles and practices of modern production systems control including scheduling, shop floor control, MRP systems, their design and implementation. Au, Sp Qtrs. 4 cr, 1 1/2 hr lab. Arr. Prereq: 504, 521, 522, 523, 531.

534 Principles of Industrial Engineering U 4
A survey of operations methods used in industry including optimization, probability and statistics, waiting line models, quality control, simulation models, and scheduling models. Au, Wi, Sp Qtrs. 4 cr. Prereq: 3rd yr standing or equiv with written permission of instructor. Not open to students in ind eng.

573 Cognitive Engineering U 3
Introduction to the design of person-machine systems, psychological aspects of human performance, and design of displays and controls; human-computer interaction; human information processing. Wi, Sp Qtrs. 2 cr, 1-2 hr lab. Prereq: Stat 425 and 525 and Jr standing in ind eng or written permission of instructor. Not open to students with credit for 673.

602 Analysis of Die-Casting Processes U 3
Fundamental principles underlying the die casting process; integration of cast component design, process requirements and economics. Wi Qtr. 2 1/2 hr. Prereq: Grad or yr standing in Engineering. Cross-listed in Materials Science and Engineering.

603 Principles of Occupational Biomechanics and Industrial Ergonomics U 3
In-depth treatment of occupational biomechanics and industrial ergonomics to provide transition to more advanced research-oriented topics. Au Qtr. 2 1/2 hr. Prereq: 503 or permission of instructor.

604 Advanced Engineering Economic Analysis U 3
Theoretical foundations and advanced topics in economic analysis of engineering projects and operations; economic engineering decisions under uncertainty and uncertainty. Wi Qtr. 2 1/2 hr. Prereq: 504.

607 Manufacturing Processes and Simulation U 4
Introduction to advanced theory and simulation of manufacturing processes, including machining, casting, forming, and injection molding. Wi Qtr. 2 1/2 hr, 1-2 hr lab. Prereq: 511.

608 Industrial Practice in Systems Design U 4
An in-depth systems design project for industrial engineering. 2-qtr sequence, must be taken in consecutive qtr. GEC 3rd writing course.

608.01 Industrial Practice in Systems Design I
Problem formulation, data collection, and exploration of design alternatives for an actual systems engineering problem. Au, Wi Qtrs. 1 2 hr, 2 2 hr lab. Prereq: 532, 533, 505 or concr, 610 or concr. This course is Progress ("P") graded. 2-qtr sequence, must be taken in consecutive qtr.
608.02 Industrial Practice in Systems Design II
Exploration and selection of design alternatives; justification, recommendation, and written and oral presentation of problems solution.
Wi, Sp Qtrs. 1 2-hr cl, 2 2-hr lab. Prereq: 608.01. 2nd of 2-ctr sequence; must be taken in consecutive quarters.

610 Planning of Engineering Experiments U G 3
Study of the planning of industrial and research experiments.
Au Qtr. 2 1 1/2-hr cl. Prereq: 502 or written permission of instructor.

611 Metal Cutting Theory and Practice U G 4
Analysis and application of machining processes; topics include tool wear, cutting mechanics, heat, surface integrity, and properties of materials.
Sp Qtr. 2 cl, 1 3-hr lab. Prereq: 631 and Eng Mech 420, or equivs.

614 Automation U G 3
Au, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 311 or equiv.

615 Automation Laboratory U G 1
Application of principles of mechanization to manufacturing operations and processes.
Au, Sp Qtrs. Prereq or concur: 614.

620 Computer Application in Industrial Process Control U G 4
Provides an introduction to evaluation and design of practical industrial control systems with emphasis on real time computer control of discrete processes. Millers.
Au, Sp Qtrs. 2 1-hr cl, 1 2-hr lab. Prereq: En Graph 200 or equiv and 5 standing in ind eng or permission of instructor.

621 Introduction to Parametric Design U G 3
Design of components, assemblies, molds and dies using parametric and feature-based design principles.
Au, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 656 or Mech Eng 561 or Weld Eng 600 or grad standing in ind eng, mech eng or the manufacturing systems and engineering program. Not open to students with credit for Mech Eng 621. Cross-listed in Mechanical Engineering.

622 Tool Engineering U G 4
Design of tools, jigs, and fixtures. Basic elements of fixture design, such as form, locating points, clamping devices, and the use of standardized parts.
Au, Sp Qtrs. 2 1 1/2-hr cl, 1 3-hr lab. Prereq: 311 or prereq or concur: Ind Eng/Mech Eng 521. Not open to students with credit for 605 or Mech Eng 623. Cross-listed in Mechanical Engineering.

623 Machine Tool Control and Programming U G 4
Provides an introduction to numerically controlled machine tools including principles of operation, programming systems, computer assisted programming, performance characteristics, and applications.
Sp Qtr. 2 1 1/2-hr cl, 2 3-hr labs. Prereq: Ind Eng/Mech Eng 621 and Ind Eng/Mech Eng 683 or permission of instructor. Not open to students with credit for 605 or Mech Eng 623. Cross-listed in Mechanical Engineering.

625 Engineering Analysis for Design and Simulation U G 5
Fundamentals of engineering analysis of heat flow, thermal and residual stresses, and fracture and fatigue with applications to design and simulation in welding and manufacturing.
Wi Qtr. 4 cl, 1 3-hr lab. Prereq: Eng Mech 220. Not open to students with credit for Weld Eng 620. Cross-listed with Weld Eng 620.

640 Engineering Project Management U G 3
Introduction to project management for engineers. Conception, planning, scheduling, budgeting, leadership, management, tracking, completion of projects. Project management software is introduced and used.
Sp Qtr. 2 1 1/2-hr cl, Prereq: 3rd yr standing in College of Engineering or written permission of instructor.

649 Quantitative Design Methods in Systems Engineering U G 3
Model formulation and solution methods for system design problems with emphasis on matrix and vector space methods for static and dynamic systems. Miller.
Au Qtr. 2 cl. Prereq: 549 or Math 471 or equiv and permission of instructor.

653 Engineering Data Analysis U G 3
Graphical and other special techniques for estimating parameters and testing goodness of fit of non-normal distributions to engineering data.
Sp Qtr. 2 1 1/2-hr cl. Prereq: 502 or written permission of instructor.

655 System Reliability and Availability U G 3
Prediction of system reliability and availability, life cycle costing, methods for analyzing system design concepts from the viewpoint of reliability and availability.
Wi Qtr. 2 cl. Prereq: 436 or Stat 426 or 436 or permission of instructor. Offered every other yr in odd yrs.

662 Introduction to Applied Decision Analysis U G 3
Introduction to decision analysis and its application; deals with modern utility theory and the application of this theory to engineering decisions under risk.
Au, Wi Qtrs. 2 cl. Prereq: 435 or Stat 425 or 435 or equiv with written permission of instructor.

671 Industrial Accident Prevention and Control U G 3
Industrial safety practices; OSHA: models of accident phenomena; measurement, inspection, and control of unsafe behavior and conditions; design of loss control programs. Student projects.
Wi Qtr. 2 cl. Prereq: 501 or equiv with written permission of instructor.

672 Analysis and Design of Workplace Environments U G 4
Measurement of environmental parameters including noise, heat, gases, particulates, and light, and their effect on human productivity; design of engineering controls; laboratory includes industrial surveys.
Au Qtr. 2 cl, 1 2-hr lab. Prereq: 501 or equiv with written permission of instructor.

673 Cognitive Engineering G 3
Methodology for design of person-machine systems; psychological aspects of human performance; design of displays and control, human computer interactions, and human information processing. P. Smith.
Au Qtr. 2 cl, 1 2-hr lab. Prereq: Stat 425 and 426, and jr standing in ind eng or written permission of chairperson. Not open to students with credit for 573.

680 Introduction to Integrated Production Control Systems U G 3
Introduction to the design and analysis of integrated production control systems, including master scheduling, materials requirement planning, just-in-time systems, sequencing and scheduling.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 652 and 656 or equiv.

682 Design for Manufacturing U G 4
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl, 1 2-hr lab. Prereq: 523 or Mech Eng 651 or grad standing. Not open to students with credit for Mech Eng 582 or 682. Cross-listed in Mechanical Engineering.

683 CAD/CAM Laboratory for Rapid Design Prototyping U G 3
Rapid design prototyping using engineering workstations, CAD/CAM software, and table-top CNC milling machines, lathes, and injection molding machine. Miller.
Au, Wi, Sp Qtrs. 1 2-hr cl, 1 2-hr lab. Prereq: 656 or Mech Eng 651; or grad standing in ind eng, mech eng or in the "manufacturing systems and engineering program. Not open to students with credit for Mech Eng 582 or 683. Cross-listed in Mechanical Engineering.

689 Senior Laboratory U 3
Students pursue independent laboratory project of up to two quarters duration; proposals must be approved by a faculty member prior to registration for the course.
Prereq: Sr standing in ind eng. Repeatable to a maximum of 6 cr hrs.

693 Individual Studies in Industrial Engineering U G 1-6
Designed to give the advanced students an opportunity to pursue special studies not offered in fixed curricula.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 18 or hrs. This course is graded S/U.

694 Group Studies in Industrial Engineering U G 1-6
Advanced topics in the various phases of industrial engineering.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 23 cr hrs.

700* Empirical Model Building in Industrial Engineering U G 3
Study of empirical problems in IE including the use of response surface methodology; topics include empirical strategies related to problems in manufacturing and human factors.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 610 or Stat 641 or 645 or equiv. Not open to students with credit for 750.03.

701* Arbitration of Industrial Engineering Disputes U G 3
Case studies in the arbitration of technical disputes involving incentive standards, job evaluation, crew size, line balancing, etc.
Wi Qtr. 2 cl. Prereq: 501 or 534 or equiv with written permission of instructor.

702 Mathematical Programming: Linear G 3
Convex and concave problems, global solutions, extreme point solutions, degeneracy, the Simplex method, duality, complementary slackness, sensitivity analysis, parametric programming, and applications.
Au Qtr. 2 1 1/2-hr cl. Prereq: Math 568 or equiv with written permission of instructor. Not open to students with credit for 830.
703 Stochastic Processes Used in Systems Engineering U G 3
Introduction to modeling of stochastic systems, including Poisson processes and Markov chains.
Au Qtr. 2 1/2-hr cl. Prereq: Stat 425 or 521 or equiv. Not open to students with credit for 843.

704 Introduction to Discrete System Simulation U G 4
Introduction to the analysis of systems via discrete computer simulation models, generation of random variables.
Wi Qtr. 2 2-hr cl. Prereq: Stat 426, Cpr/Inf 459.21 or 2541 or equiv with permission of instructor.

705 Robotic Applications in Manufacturing U G 3
Aspects of computer based robots; applications of robots in advanced manufacturing systems; role of learning machines in process automation.
Maul. Wi Qtr. Prereq: 620 or written permission of instructor.

709 Statistical Quality Control and Quality Management Systems P G 3
Emphasizes the application of modern methods in quality engineering.
Au, Sp Qtrs.

711 Introduction to Metal Forming U G 3
Metal forming processes, fundamentals of plastic deformation in metal forming; approximate analysis of metal forming processes.
Sp Qtr. 2 1/2-hr cl. Prereq: 607 or permission of instructor.

716 Clinical Ergonomics and Management of Industrial Injuries U G 3
The multidisciplinary concepts and methods to accelerate return-to-work, enhance worker capability, job analysis, preplacement tests, reduce injury and compliance with the regulations will be emphasized.
Sp Qtr. 2 1/2-hr cl. Prereq: 503 or 603 or permission of instructor.

717 Practice Oriented Ergonomics U G 3
The practical and theoretical development of concepts and methodologies to be used for ergonomic evaluation of work will be emphasized with the goal of preventing injuries.
Sp Qtr. 1 1-hr cl. Prereq: 503 or 603 or permission of instructor.

718 Intermediate Occupational Biomechanics U G 3
Biomechanics of connective tissues and the principles of rigid and deformable body mechanics for developing analysis tools for evaluating human operators within the work place.
Wi Qtr. 2 1/2-hr cl. Prereq: 603 or permission of instructor.

719 Advanced Occupational Biomechanics U G 3
Engineering principles of occupational biomechanics supplemented with biomechanical models of various industrial tasks.
Sp Qtr. 2 1/2-hr cl. Prereq: 718 or permission of instructor.

720 Computer Applications in Manufacturing Systems U G 3
Principles of digital computer utilization for the control of manufacturing processes and the design, planning, and control of manufacturing systems are presented. Miller.
Wi Qtr. 2 cl. 2 lab hrs. Prereq: 620.

737 Proseminar in Cognitive Science U G 2
An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Sp Qtr. 1 1-hr cl. Prereq: CIS 612, Linguistics 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 or hrs. Cross-listed in CIS, Linguistics, Philosophy, Psychology, and Speech and Hearing Science.

740 Contract Research Management G 2
Introduction to contract research; marketing and proposals; budgets, accounting, project and group management, quality, and ethics. Lundquist.
Au Qtr. 3 cl. Open only to graduate students in engineering or physical sciences. This course is graded SU.

750 Advanced Studies in Industrial Engineering U G 3
Prereq: 4th yr standing and permission of instructor. Repeatable to a maximum of 24 or hrs; subdivisions not repeatable. The student must register for specific classes in areas as indicated below, and may reenter for more than one at a time.

750.04 Discrete-System Analysis and Control

750.11 Organization of Industrial Engineering Functions

750.12 Production Engineering

754 Simulation of Complex Systems U G 4
Analysis of systems via continuous discrete and combined continuous-discrete simulation; continuous simulation of discrete-event processes; advanced discrete system simulation.
Wi Qtr. 2 2-hr cl. Prereq: 513 and 564 or 703 and 704.

756 Analysis of Multi-Criteria Decisions U G 3
Multiple criteria decision-making, multi-attribute decision theory, and linear multi-objective programming.
Sp Qtr. 2 cl. Prereq: 656 or equiv with written permission of instructor.

758 Design, Analysis, and Control of Integrated Manufacturing Systems G 3
A systematic description of traditional, cellular, and flexible configurations; an integrated view of interacting elements and their design, analysis, and control with examples from industry.
Sp Qtr. Prereq: Stat 425 and 426 or 525 or equiv.

760 Basic Concepts of Systems Theory U G 3
Study of formal concepts of systems theory including general models of systems, abstract dynamic systems, the concept of state, goal seeking, and decision making systems. Miller.
Wi Qtr. 2 cl. Prereq: 648 or written permission of instructor.

772 Decision Analysis U G 3
Introduction to Bayesian decision analysis and its applications. Fraser.
Sp Qtr. Prereq: 662. Not open to students with credit for 862.

773 Cognitive Engineering: Human Interaction with Intelligent Systems U G 3
Investigation of topics in cognitive engineering including techniques for aiding human performance, human expertise and human error, cognitive modeling of person-machine systems, and paradigms for human-computer interaction.
Sp Qtr. 2 cl. 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

774 Human-Computer Interaction in Complex Systems U G 3
Design of human-computer interfaces for applications such as cockpit, process control rooms, space applications, and information retrieval; students will design an interface for an actual system.
Sp Qtr. 2 cl. 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

775 Cognitive Engineering Methods: Protocol Analysis and Knowledge Acquisition U G 3
Class teaches the theory and practice of methods in cognitive engineering, including protocol analysis, knowledge elicitation for intelligent systems, and cognitive task analysis.
Wi Qtr. 2 cl. 1 2-hr lab. Prereq: 573 and permission of instructor (undergraduates); 673 (graduates).

H783 Undergraduate Honors Program Research U 1-3
Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in ind eng or equiv. Students must have a GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 8 or hrs.

802 Operations Research Models and Methods U G 3
Examines many basic OR models including the knapsack, traveling salesman, newsboy, and secretary problems; and random walk and queuing models, algorithmic concepts are discussed.
Wi Qtr. 2 1/2-hr cl. Prereq: 702 and 703. Not open to students with credit for 842.

810 Product Development Analysis G 3
Application of multivariate statistics to problems of industrial experimental planning and analysis; multiple responses, product profile analysis, multivariate quality control.
Au Qtr. 2 1 1/2-hr cl. Prereq: 701 or equiv with written permission of instructor. Stat 645. Not open to students with credit for 836.

811 Methods Engineering G 3-12
Advanced work in one or more special phases of time study, motion study, job evaluation, wage analysis and payment systems, and speed and effort rating; the viewpoint of unions, and problems arising from labor-management relationships.
Au, Wi, Sp Qtrs. Prereq: 501 and 502 or equiv with written permission of instructor.

812 Product Development Experimentation G 3
Application of linear statistical models to industrial engineering experimentation with emphasis on resource constrained investigations.
Au Qtr. 2 1/2-hr cl. Prereq: 700 or equiv with written permission of instructor. Stat 645. Not open to students with credit for 836.

814 Stochastic Processes Used in Systems Engineering II U G 3
Additional models of stochastic systems including Markov, renewal, and other stochastic processes.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 703.
815 Estimation of System Parameters from Time Series Data G 3
Estimation of parameter values for stochastic process models used in systems engineering, model identification and forecasting; single and multiple time series.
Au Qtr: 2 1 1/2 hr cl. Prereq: 704 and 814.

816 Advanced Queuing Theory G 3
Mathematical analysis and design of waiting line systems emphasizing transient solutions, general arrival and service distributions, and priority queues and networks of queues.
Au Qtr: 2 1 1/2 hr cl. Prereq: 814 or equiv. Not open to students with cr for 813.

817 Advanced Seminar Cognitive Engineering G 3
Advanced seminar on contemporary topics dealing with engineering applications of cognitive psychology, artificial intelligence, and linguistics. Topic areas include human-computer interactions, the design of information retrieval systems, and mental models of complex systems.
Au Qtr: 2 cl. Prereq: 673 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

818 Advanced Models in Human Factors Engineering G 3
Advanced study in applied models used in human factors engineering; topics include models of human error, workload measurement and evaluation, risk acceptance, and performance under work paced and environmental stress.
Au Qtr: 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

819 Advanced Topics in Biomedical Ergonomics G 3
Advanced study of state of the art biomechanics evaluation methods applied to ergonomic problems; topics include hand tool evaluation, low back injury, electromyography, and anthropology. Merras.
Wi Qtr: 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

820 Human Error and the Human Contribution to System Failures G 3
Psychology of human error and contribution of human error to disasters in high-risk systems.
Au Qtr: 2 1 1/2 hr cl. Prereq: 673 or permission of instructor.

821 Problems in Production Engineering G 3-12
Advanced work in one or more phases of production engineering involving problems in production design, equipment planning, tool design, and quantity and quality control.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

822 Seminar in Advanced Topics in Manufacturing G 3
Seminar will feature speakers from industry; students will prepare reports and oral presentations on various topics. Aftan.
Sp Qtr: 2 1/2 hr cl. Prereq: Admission to grad program or permission of instructor.

824 Sequencing and Scheduling G 3
Wi Qtr: 2 1 1/2 hr cl. Prereq: 702 or permission of instructor.

828 Advanced Studies in Plant Design and Materials Handling G 3-12
Advanced work in one or more special phases of plant design and materials handling, such as group technology and robotics.

829 Dynamic Biomechanical Lab Analysis for Occupational Low Back Disorder G 4
Builds upon theoretical information developed in Ind Eng 810. Provides link between theoretical bioodynamic logic and laboratory measurement in assessment of occupational biomechanical issues for occupational low back disorder. Sp Qtr: 2 cl, 1 4-hr lab. Prereq: 819. Repeatable to a maximum of 8 cr hrs.

831 Mathematical Programming: Nonlinear G 3
Conv ex sets, convex functions, saddle point optimality criteria, the Fritz John and Kuhn-Tucker conditions, sensitivity and parametric results, applications, and an introduction to algorithms.
Wi Qtr: 2 cl. Prereq: 702.

832 Mathematical Programming: Advanced Nonlinear G 3
Wolfe/Falk duality, conjugate/geometry duality, applications of quality (e.g., geometric programming, quadratic programming, location problems, decomposition).
Sp Qtr: 2 cl. Prereq: 831.

833 Optimization Methods for Large Systems G 3
Methods for the solution of large optimization problems including decomposition, generalized linear programs, relaxation methods, and primal and dual hierarchical decompositions.
Sp Qtr: 2 cl. Prereq: 710 or 631 or equiv with written permission of instructor.

834 Integer Optimization Methods G 3
Methods used in the solution of applied optimization problems which contain integer variables. Content emphasizes general properties and use of common methods. Posner.
Au Qtr: 2 1 1/2 hr cl. Prereq: 656 or 702 or Math 671 or equiv with written permission of instructor.

837 Multilevel Systems Theory G 3
Examination of the structure of hierarchical systems including problems of decomposition and coordination. Miller.
Sp Qtr: 2 cl. Prereq: 760 and permission of instructor.

854 Advanced Simulation Design and Experimental Procedure G 3
Variance reduction, experimental procedures, estimation of the variance at the time series average, comparison and ranking of alternatives, and response surface search methods.
Sp Qtr: 2 1 1/2 hr cl. Prereq: 554 or 704.

863 Dynamic Programming G 3
Theory, methodology, and application of dynamic programming.
Sp Qtr. Prereq: 651 or 710 or equiv with permission of instructor.

864 Optimization of Dynamic Systems G 3
Study of theory and methodology for optimum control of dynamic systems (sequential decision systems); includes calculus of variations, Pontryagin Maximum Principle, and associated approaches. Miller.
Wi Qtr: 2 cl. Prereq: 649 or equiv with written permission of instructor.

866 Programming and Control Research G 3-12
Advanced work in the several phases of programming and control theory: consists primarily of application of mathematical methods to the formulation and solution of process programming and control problems. Miller.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

871 Man-Machine Systems Research G 3-12
Advanced work in special research topics in man-machine systems.
Au, Wi, Sp Qtrs. Prereq: 672 or 673. This course is graded S/U.

881 Seminar in Industrial Engineering G 2
Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

885 Practices in Operations Research G 3
Application of OR methods in manufacturing, financial, governmental, educational, and service organizations; students work on actual problems of a sponsoring organization and present both oral and written reports.
Sp Qtr: 2 1 1/2 hr cl. Prereq: 802. Not open to students with credit for 844.

893 Individual Studies G 1-5
Designed to give advanced graduate students an opportunity to pursue special studies not offered in fixed curricula. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 18 or hrs. This course is graded S/U.

894 Group Studies G 1-6
Advanced topics in the various phases of industrial engineering.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 18 cr hrs.

899 Interdepartmental Seminar G 1-5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs.

900 Seminar in Operations Research G 3
Seminar on research topics in Operations Research designed to prepare PhD students for dissertation research and research careers.
Au, Wi, Sp Qtrs. 2 1 1/2 hr cl. Prereq: PhD standing or permission of instructor, other prerequisites vary by topic. Repeatable to a maximum of 15 cr hrs, including or hrs earned in each decical subdivision.

900.01 Optimization
900.02 Probabilistic Models
900.03 Simulation and Experimentation
900.04 Decision Analysis
900.05 Systems Theory
Industrial Design

380 Hopkins Hall, 128 North Oval Mall, 292-6746

160 Introduction to Industrial Design U 3
Introduction to the rationale of design and systematic design processes; an overview of the profession of industrial design; an introduction to the department's educational program.
Au, Wi Qtrs. 1 cl, 1 1/2-hr cl. VPA Admis Cond course.

199 Industrial Design: Visual Thinking and Problem Solving U 3
Introduction to drawing and problem solving in the context of design; emphasis on materials, tools, and rapid visualization.
Au, Wi, Sp Qtrs. 2 2-hr labs.

250 Studies in Industrial Design U 3
Studies in specified areas in the field of industrial design, with emphasis on particular aspects of product, visual communication, and interior design problems.
Au, Wi, Sp Qtrs. 2 2-hr labs. Prereq: Permission of instructor.

251 Basic Industrial Design I U 5
Introduction to the theories, methods, and practices of industrial design with primary emphasis on basic visual language and visual encoding practices.
Au Qtr: 3 3-hr. labs. Prereq: Successful completion of English 110 or 111 or equiv. Ind Dsgn 160, Math 116, and the qualifying exam; and a cumulative pt-hr ratio of 2.00.

252 Basic Industrial Design II U 5
Application of three-dimensional organizational principles, introduction to visual logic, freehand perspective sketching systems, and basic three-dimensional modeling techniques and materials.
Wi Qtr: 3 3-hr. labs. Prereq: 251 or permission of instructor.

253 Industrial Design History U 3
A history of industrial design as affected by technology, science, and cultural world view.
2 cl, 1 1/2-hr lec/lab. Prereq: Ind dsgn major or permission of instructor. Not open to students with credit for 253.03.

254 Introduction to Materials and Processes for Designers U 3
An overview of the properties and fabrication principles for materials used in industrial, interior, and visual communication design.
Wi Qtr. 2 2-hr cl. Prereq: 251; conc: 252; and permission of instructor.

258 Basic Typography U 3
Introduction to the knowledge and skills of typographical design and its corresponding aesthetic, functional, and technological applications and utilizations.
Sp Qtr. 1 2-hr cl, 2 2-hr labs. Open only to majors in ind dsgn or art educ or by permission of instructor.

262 Basic Industrial Design III U 5
Introductory course for majors in department, unique to each area.
Sp Qtr. 3 3-hr. labs. Prereq: 252; or permission by instructor.

262.02 Basic Visual Communication Design Practices
Introduction to basic two- and three-dimensional practices in visual communication design; emphasis on systematic method and research techniques.

262.04 Basic Product Design Practices
Introduction to the fundamentals of product design with emphasis on development processes, technical skills and communication; development of simple exemplary products.

262.08 Basic Interior Space Design Practices
Introduction to three-dimensional spatial organization, basic interior design conceptualization and principles of composition; application of basic human needs and space defining elements.

294 Group Studies in Industrial Design U 1-5
The investigation of various problems in industrial design.
Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 15 cr. hrs.

460 Intermediate Industrial Design I U 5
Au Qtr. 3 3-hr labs. Prereq: 160, En Graph 121, 122, 204, or 206 (ind dsgn major); Communc 105 or 110, Ind Dsgn 253.01, 253.03, 258, Math 116 or equiv (vis comm major); Photog 201 or elective; Stat 135 or 145 or similar course from approved GEC list; and acceptance resulting from portfolio review, or permission of chairperson.

460.02 Visual Communication Design
Design and application of graphic elements based on visual imagery in production of visual communications using photographic and hand graphic techniques within frameworks of theories of communication and signs.

460.04 Product Design
Design of simple products as a means of introducing systematic methods, sketching, model making, human factors, and presentation.

460.08 Interior Space Design
An introduction to conceptual planning space organization, space requirements, and human factors, with emphasis on model making and presentation techniques.

461 Intermediate Industrial Design II U 5
Wi Qtr. 3 3-hr labs.

461.02 Visual Communication Design
Design and application of typographical elements in production of verbal communications using photographic, hand graphic, and computer techniques within frameworks of theories of communication and signs.
Prereq: 460.02 and 551.

461.04 Product Design
Emphasis is placed on the refinement of systematic design methods, visualization, detailing and documentation; students are introduced to team working and client requirements.
Prereq: 460.04 and 551.

461.08 Interior Space Design
Introduction to furniture design, exploring material and production characteristics, detailing and full-scale model making, emphasizing man-space-product interface, and special user requirements.
Prereq: 460.08 and 551.

462 Intermediate Industrial Design III U 5
Sp Qtr. 3 3-hr labs.

462.02 Visual Communication Design
Integration of typographic and graphic elements based on visual imagery in design and development of two-dimensional visual communications using photographic, hand graphic, and computer techniques.
Prereq: 461.02; conc: 555; or equiv with written permission of instructor.

462.04 Product Design
Developing of specialized problem solving approaches to more complex product designs which emphasize the refinement of solutions in terms of suitable technology and user consideration.
Prereq: 461.04; conc: 502 and 555; or equiv with written permission of instructor.

462.08 Interior Space Design
Design of specialized interior spaces, introducing space planning and design methodology; emphasis on use interaction and existing space and furniture system analysis.
Prereq: 461.08; conc: 502 and 555.

501 Conceptual Drawing for Industrial Design U 3
Principles of creative conceptual drawing and sketching methods used in the design process.
Sp Qtr. 2 3-hr cl. Prereq: 253.01 and 253.03; En Graph 121 and 122; conc: 551 and 460.04 or 460.06; or written permission of instructor.

502 Three Dimensional Design Graphics U 3
Principles of graphic design for product and interior space design.
Au Qtr. 2 3-hr cl. Prereq: 461.04 or 461.06, 501, and 552; and Photog 201.

511 Visual Communication Hand Graphics U 3
Advanced laboratory practice in communicating with drawn messages; evaluation and selection of appropriate visual treatments and techniques for media of print, film, and television.
Au Qtr. 2 3-hr labs. Prereq: 253.01; conc: 460.02 and 551.

514 Graphic Design Production U 3
Fundamental information on the preparation, administration, and development of printed matter used by the visual communication designer.
Wi Qtr. 3 cl. Prereq: 258, 460.02, and 511; conc: 461.02 and 552.

521 Interior Drawing U G 3
Principles and application of conceptual drawing techniques.
Sp Qtr. 2 3-hr labs. Prereq: 253.01 and En Graph 122 or Arch 271.

522 Interior Graphics U G 3
Application and meaning of light, color, material structures, and surface textures; principles of spatial order systems, correlations and intercommunication of space components, forms, signs, styles.
Sp Qtr. 2 3-hr labs. Prereq: 253.01.
523 Interior Space Modeling U G 3
Principles and practices to represent spatial components and user interaction; communication and simulation of space in 2- and 3-dimensional form.
Au Qtr. 2 3-hr. labs. Prereq: 521 and 551, or permission of instructor.

524 Interior Specification U G 3
Overview and analysis of interior product systems, furniture line market surveys; interior specification and contracting.
Wi Qtr. 2 3-hr. labs. Prereq: 4th yr standing in ind design.

551 Industrial Design Manufacturing Materials and Processes U 3
Overview of the properties and fabrication principles for materials used in visual communication, interior space, and product design.
Wi Qtr. 2 2-hr cl, 1 1-hr lab. Prereq: 460.02 or 460.04, and 501; or concur: 480.08 and 521.

552 Industrial Design Communication Practices U 3
An overview of communication methods, techniques, and procedures utilized in the various stages of the design process.
Sp Qtr. 1 2-hr cl, 1 1-hr lab. Prereq: 460.02 or 460.04 or 460.06.

554 Human and Environmental Systems Design U 3
Overview of the social/behavioral/physical nature of humans and their interaction with the environment as interpreted by the industrial designer.
Au Qtr. 1 2-hr cl, 1 1-hr lab. Prereq: 462.02 or 462.04 or 462.08; and 555.

555 Design Methodology U 3
Introduction to and application of qualitative and quantitative methodology useful in a problem solving process.
Au Qtr. 2 2-hr cl, 1 1-hr lab. Prereq or concur: 462.04 and 502; or 462.08 and 502; or 462.02; or written permission of instructor.

603 3D Computer-Aided Design Visualization U G 3
Application of computer graphics to visualizing the design issues of form, space, color, and the dynamics of human interaction within problems of interior space and product design.
Wi Qtr. 1 1-hr cl, 2 2-hr lab. Prereq: 502 or 523 or equiv jr, sr, or 1yr grad standing in ind design; and written permission of instructor.

656 Industrial Design Professional Practices U G 3
Investigation of the administrative and legal aspects of the design profession contrasting the private firm with corporate and free-lance types of practice.
Sp Qtr. 1 1-hr cl, 1 1-hr cl. Prereq: jr standing in interior space, product, or visual communication design major; or written permission of instructor.

660 Advanced Industrial Design I U G 5
Au Qtr. 3 3-hr labs.

660.02 Visual Communication Design
Integration of typographic and graphic elements based on visual imagery in design and development of three-dimensional visual communication solutions in packaging, exhibit design, or sign systems.
Prereq: 462.02, 551, 552, and 555.

660.04 Product Design
Design of products and product systems for complex functions; emphasis is on extending design consideration to include detailing, mock-ups, prototypes, testing and servicing.
Prereq: 462.04, 552, 551, and 555.

660.08 Interior Space Design
Design of complex interior spaces emphasizing psychological aspects of spatial components, relating to human performance and behavior; detail development and specification of space creating products.
Prereq: 462.08, 552, 552, and 555.

661 Advanced Industrial Design II U G 5
Wi Qtr. 3 3-hr labs.

661.02 Visual Communication Design
Application of planning and analysis techniques in designing two- or three-dimensional visual communication systems; emphasis on application of visual communication research practices and methodology.
Prereq: 554 and 660.02.

661.04 Product Design
Introduction of field research experience and interdisciplinary expertise to the design of products and product systems.
Prereq: 554 and 660.04.

661.08 Interior Space Design
Design of public environments using an interdisciplinary team approach for conceptualization, documentation, and presentation, emphasizing environmental characteristics, and the physical and psychological functionalism of space.
Prereq: 554 and 660.08.

662 Advanced Industrial Design III U G 5
Sp Qtr. 3 3-hr labs.

662.02 Visual Communication Design
Individual student projects; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio refinement.
Prereq: 661.02; concur: 656; or equiv with written permission of instructor.

662.04 Product Design
Product design thesis project; students are to demonstrate their proficiency and grasp of previous subject matter in a project approved by the instructor; portfolio development.
Prereq: 661.04; concur 656; or equiv with written permission of instructor.

662.08 Interior Space Design
Interior space thesis project; students are to demonstrate their proficiency, ability to evaluate and solve problems, comprehension for human needs and environmental concerns; portfolio development.
Prereq: 661.08; concur 656; or equiv with written permission of instructor.

671 Photo Graphics U G 3
An experimental photo workshop in techniques of manipulating existing images to create new visual ideas, emphasizing individual exploration, discussion and critiques.
Sp Qtr. 2 2-hr labs. Prereq: 461.02 and 514; concur: 462.02 and 555.

673 Interaction and Visual Interface Design U G 4
Application of visual communication design principles to interactive computer-based presentations of information as practiced in the profession.
As, Wi Qtr. 2 2-hr labs. Prereq: 461.02 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

685 Field Work in Industrial Design U G 3-10
Field application of industrial design in a capacity requiring a close working relationship with a professional environment.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

693 Individual Studies U G 2-5
Advanced study for students in specialized programs.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

694 Group Studies U G 2-5
Group studies for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Arr. Prereq: Written permission of chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary: contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

750 3-D Computer Modeling Applications for Artists and Designers U G 5
Advanced techniques and methods using 3-D geometric modeling and animation application programs and techniques to design and synthesize 3-D forms.
Au Qtr. 2 2-hr cl; 1 2-hr lab. Prereq: Written permission of instructor.

751 Advanced 3-D Computer Modeling Applications for Artists and Designers U G 5
Illumination and shading, application programs and techniques used by artists and designers to represent surface attributes, including color, texture, and reflectance for 3-D model visualizations.
Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 750 and written permission of instructor.

752 3-D Computer Generated Visualization and Simulation Application for Artists and Designers U G 5
Advanced topics in computer-generated motion application and script development used by artists and designers to create animating scenes and simulations.
Sp Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 751 and written permission of instructor.
International Studies 219

790 Graduate Design Studio G 5
Interdisciplinary projects for solving complex design problems; planning, analysis, and implementation of design research, problem definition, development, team formation, and advanced production and presentation methodologies.
Su, Au, Wi, Sp Qtrs. 9 hrs. Prereq: 662 or esuv or undergrad ind disc degree, and grad standing; or permission of instructor. Repeatable to a maximum of 20 cr hrs.

785 Orientation to Graduate Studies in Industrial Design U G 4
Overview of current and future trends in industrial design; introduction to design research and communication methods; faculty interests and research; available resources; requirements of graduate level study.
Au Qtr. 2 2-hr cl.

786 Design Research and Inquiry U G 4
Design as a mode of inquiry, including examination of communication process and models, and emphasizing general problem-solving as a goal-directed, value-laden activity.
Wi Qtr. 2 2-hr cl. Prereq: 785.

787 Industrial Design Planning, Development, and Evaluation U G 4
Preparation for graduate thesis and project courses with emphasis on concept formulation and evaluation based on communication models and other techniques of industrial design.
Sp Qtrs. 2 2-hr cl. Prereq: 786.

788 Industrial Design Education G 3
A rationale and structure for industrial design education; emphasis on basic concepts; learning methods, education techniques, and writing instructional objectives.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing.

797 Interdepartmental Seminar U G 1-5
Interdisciplinary knowledge and problems examined and discussed in the context of shared concerns.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

894 Group Studies G 1-5
Group studies for students in specialized programs.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

895 Research Problems in Design G 3-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

993 Individual Studies G 1-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

998 Research in Design: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/A1.

International Studies 219

2186 Derby Hall, 154 North Oval Mall, 922-9657

201 Introduction to Peace Studies U 5
The meanings of peace and peacelessness in today's world, varied approaches to peace, contributions of many disciplines and professionals, and the significance of peoples' movements.
Au, Wi, Sp Qtrs. 2 2-hr cl. H201 (honors) may be available to students enrolled in an honors program or by permission of instructor. GEC soc sci organizations and politics course.

210 Introduction to Western Europe U 5
Introduction to Western Europe with a particular focus on its political and economic development.
Au Qtr. 2 2-hr cl, 1 rec. GEC soc sci human, natural, and economic resources course.

215 Introduction to Development Studies U 5
Introduction to the contemporary field of development studies through examination of the developing countries of Asia, Africa, and Latin America.
Au Qtr. 5 cl. GEC soc sci human, natural, and economic resources course.

230 The Rise and Fall of the Soviet Union U 5
Survey of the birth, growth, decline, and death of communism in the Soviet Union: land, people, history, politics, social institutions, and culture; conducted by members of several departments.
Au, Wi Qtrs. 5 cl. GEC soc sci organizations and politics course.

231 Introduction to Eastern Europe since World War II U 5
Survey of the land, people, history, politics, social institutions, literature, and arts of Eastern Europe since World War II.
Au, Wi Qtr. 5 cl. GEC soc sci organizations and politics course.

235 Introduction to China and Japan U 5
Interdepartmental survey of contemporary Asian civilization; geographic and racial background, historical and cultural heritage, social organizations, economic and political problems, and international relations.
Su, Sp Qtrs. 5 cl. GEC soc sci organizations and politics course.

240 Introduction to Latin America U 5
Interdepartmental survey of Latin American societies, anthropology, economics, history, literature, geography, and agriculture.
Sp Qtr. 5 cl. GEC soc sci human, natural, and economic resources course.

245 Introduction to the Modern Middle East U 5
Interdepartmental survey of the land, people, history, politics, religions, philosophy, social institutions, economic development, literature, and the arts, conducted by members of several departments.
Wi Qtr. 5 cl. GEC soc sci organizations and politics course.

250 Introduction to Africa U 5
Interdepartmental survey of the land, people, history, politics, social institutions, economic development, literature, and the arts, conducted by members of several departments.
Su, Au, Wi, Sp Qtrs. 5 cl. GEC soc sci organizations and politics course.

255 Introduction to Southeast Asia U 5
Interdisciplinary survey of Southeast Asia: geographic and historical background, linguistic and cultural heritage, and contemporary political and economic development.
5 cl.
294 Group Studies U 1-5
Groups of students are offered the opportunity to pursue the interdepartmental study of special topics.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

H205 Global Affaire Simulation. Few Trade U 3
Designed to introduce students to alternative modes of teaching and learning; engages them in a simulation-based analysis of a controversial and consequential global issue.
Sp Qtr. 1 2-hr cl. Prereq: Frenchman or soph standing in an honors program or permission of instructor.

443 The Analysis and Display of Data U 5
Analysis of data: introduction to the Internet, introduction to techniques in the graphical presentation of data; designed for economists and international studies majors.
Sp Qtr. 2 2-hr cl. lab Arr. Prereq: Completion of GEC Data Analysis requirement. Not open to students with credit for Econ 443. Cross-listed in Economics.

500 Conceptual Approaches to International Studies U 5
Exploration of classic and contemporary conceptual approaches to international studies used by anthropologists, economists, geographers, historians, political scientists, and psychologists.
Wi Qtr. 2 2-hr cl. Prereq: 15 cr hrs of course work in one or more relevant disciplines and permission of the instructor. Not open to students with credit for Comp 500. Cross-listed in Comparative Studies in the Humanities.

501 Selected Problems in International Studies U 5
Class discussions, with several guest speakers, informal conferences, and a reading and research program arranged to meet the special needs of those enrolled.
Sp Qtr. 2 2-hr cl. H501 (honors) may be available to students enrolled in an honors program or by permission of instructor. Open only to int stds majors or students with equal preparation. Repeatable to a maximum of 15 cr hrs.

552 Model United Nations U 5
Interactive diplomatic simulation of the political processes of the UN system focusing on selected global problems; involves class discussions, group projects, and significant student participation.
Sp Qtr. 2 2-hr cl.

597 Issues of the Contemporary World U 5
Prereq: Sr standing. GEC contemporary world courses.
597.01 Problems and Policies in World Population, Food, and Environment
Problems related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these problems, especially in low-income countries.
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. 1 2-hr rec. Not open to students with credit for Agr Econ 597.01. Cross-listed in Agricultural Economics.
597.02 Antarctic Marine Ecology and Policy
Historical and contemporary evaluation of Antarctic resource management and its scientific basis.
Au or Wi or Sp Qtrs. 3 1 1/2-hr cl. 1557.02 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq for 1557.02: Sr standing and enrollment in an honors program. Not open to students with credit for Nat Res or Zoology 597.02. Cross-listed in Natural Resources and Zoology.

601 Senior Seminar in Peace Studies U 5
Advanced offering in the peace studies track, providing an opportunity to integrate multi-disciplinary course work and internship experience into a comprehensive overview of peace theory.
2 2-hr cl. Prereq: 201, Geog 200, 25 hrs from list of courses approved for peace studies in international studies.

645 Contemporary Issues in the Middle East U G 5
Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.
Sp Qtr. 2 2-hr cl. Prereq: 245 or Sr standing. Not open to students with credit for NELC 445. Cross-listed in Near Eastern Languages and Cultures.

689 Student Intern Program in International Studies U 4-16
Opportunity to gain knowledge of the policy process in an international or government agency.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or Sr standing with at least a B average, and 25 cr hrs in a foreign language. Repeatable to a maximum of 15 or hrs. Travel and subsistence costs to be borne by the student. This course is graded SU.

693 Individual Studies U G 1-10
Designed to give able students an opportunity to pursue a special course of study not otherwise available to them.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs. The course is graded SU.

694 Group Studies U G 3-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept, chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

717 Comparative Education U G 3
Application of social science theories and methods to international issues of education.
Au Qtr. 1 2 1/2-hr cl. Prereq: Sr standing and permission of instructor. Not open to students with credit for EDUC 517. Cross-listed in Educational Policy and Leadership.

7783 Honors Research U 3-5
Informal conferences to allow full scope of the initiative of the student; a special topic is assigned to each student; the results are tested by papers and a special examination.
Su, Au, Wi, Sp Qtrs. Prereq: Sr standing and 40 cr hrs in the social sciences including 15 cr hrs in courses acceptable for a major in int stds, with a grade of A in at least half of these major courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. Failure to receive a mark of S in this course is a disqualification for special honors. This course is graded SU.

Italian

248 Cunz Hall, 1841 Millikin Road, 292-4938
Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

101 Elementary Italian I U 5
Introduction to Italian: development of skills in speaking, understanding, reading, and writing contemporary Italian.
Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 100.02 or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang course. FL Admis Cond course.

102 Elementary Italian II U 5
Further development of skills in speaking, understanding, reading, and writing contemporary Italian in a cultural context.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 101 or 100.02. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Italian I U 5
Development of skills in speaking, understanding, reading, and writing contemporary Italian at a more complex level.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104 Intermediate Italian II U 5
Readings of contemporary literary and non-literary texts and review of major grammatical structures of Italian. Course conducted in Italian.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103 or 112. Not open to native speakers of this language through regular course enrollment or EM credit or to students with credit for 104.01 or 104.02. GEC for lang course.

111 Intensive Intermediate Italian U 5 or 10
Intensive course combining content of 103 and 104 to complete the presentation of basic Italian grammar and to provide extensive practice in language skills.
Sp Qtrs. 5 2-hr cl. Prereq: 102 or equiv. Not open to students with credit for 104 or 104 decimal subdivisions, or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or 112 may not register for more than 5 cr hrs. Course intended for students who wish to expedite completion of language requirement. GEC for lang course.
112 Intensive Italian U 5, 10, or 15
Elementary and intermediate Italian; intensive drill in forms, syntax, vocabulary, and idiom; reading of short stories and plays in Italian.
Su Qtr. 15 cl. Enrollment limited to 20 students. Prereq: Permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, and 103. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 cr hrs. Students with credit for 101 only will enroll for 10 cr hrs. Students with no credit in Italian will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. No audit. GEC for lang course. FL. Admis Cond course.

151 Italian Literature in Cultural Context from the Middle Ages to the Renaissance U 5
Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the beginnings to the Renaissance.
4 cl. Not open to students with credit for 150. GEC arts and hums lit course.

152 Italian Literature in Cultural Context from the Renaissance to the Present U 5
Introduction to social-cultural trends in Italy as reflected in literary texts and other materials from the Renaissance to the present.
4 cl. Not open to students with credit for 150. GEC arts and hums lit course.

202 Italian Conversation and Composition U 5
Intensive practice in spoken, idiomatic Italian, and composition based on materials concerning Italian life and culture.
Au Qtr. 5 cl. Prereq: 104 or permission of instructor.

221 Italian Literature and Film U 5
Historical overview of Italian cinematography focusing on major literary works presented in film.
Au, Wi, Sp Qtrs. 2.2-hr cl, ar viewing time. GEC arts and hums VPA course.

293 Individual Studies U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

401 Review Grammar and Composition U 3
Review of Italian grammar; composition on assigned topics and practice in translation.
Wi Qtr. 3 cl. Prereq: 104 or permission of instructor.

402 Intermediate Italian Conversation and Composition U 5
Vocabulary building, practice in speaking Italian, and composition dealing with various aspects of present-day Italian life.
Au Qtr. 5 cl. Prereq: 104 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

420 Thematic Approaches to Modern Italian Literature and Culture U 5
Study of a major theme in modern Italian culture through analysis and discussion of literary texts, film, and opera; topic varies.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 104 cr equiv. Repeatable to a maximum of 15 hrs. Conducted in Italian.

601 Modern Italian Syntax U 5
Study of modern Italian syntax with emphasis on review of complex structures and current tendencies in syntactic analysis.
Au Qtr. 5 cl. Prereq: 401 or permission of instructor.

602 Italian Translating U 5
Translation from Italian to English and English to Italian of texts from diverse sources; analysis of prose styles and conventions in the two languages.
Au, Wi, Sp Qtrs. 4 cl. Prereq: 10 cr hrs of Italian beyond 104.

603 Advanced Italian Conversation and Composition U 5
Intensive practice in speaking and writing, based on contemporary usage.
Sp Qtr. 5 cl. Prereq: 401 or 402 or permission of instructor.

604 Italian Phonology U 5
Description and analysis of the phonetic structure of modern Italian; training in auditory and oral aspects of Italian pronunciation.
Au Qtr. 5 cl. Prereq: 401 or 402 or permission of instructor.

621 Dante U 5
Introduction to the reading of the Divine Comedy; analysis of major episodes.
Wi Qtr. 5 cl. Prereq: 10 cr hrs at the 400 level or permission of instructor.

622 Petrarch and Boccaccio U 5
Historical and aesthetic analysis of Petrarch's poetry; Petrarchism as a European phenomenon; literary background of Boccaccio's prose and verse; reading from the Decameron.
Wi Qtr. 5 cl. Prereq: 10 cr hrs at the 400 level or permission of instructor.

623 Italian Literature of the Renaissance U 5
Readings in works of representative authors of the 15th and 16th centuries such as Leonardo, Michelangelo, Castiglione, Machiavelli, Ariosto, and Tasso.
Sp Qtr. 4 or 5 cl. Prereq: 10 cr hrs in Italian literature at the 400 level or permission of instructor.

626* Italian Literature of the 17th and 18th Centuries U 5
Readings in selected works of Campanella, Marino, Galilei, Metastasio, Vico, Goldoni, Parini, and Alfieri.
Sp Qtr. 5 cl. Prereq: 10 cr hrs in Italian literature at the 400 level or permission of instructor.

627 Modern Italian Fiction U 5
Modern Italian fiction from 1800 to the present.
Au Qtr. 4 or 5 cl. Prereq: 10 cr hrs at the 400 level or permission of instructor.

628* Modern Italian Poetry and Drama U 5
Italian poetry and drama from 1800 to the present.
Au Qtr. 5 cl. Prereq: 10 cr hrs in Italian literature at the 400 level or permission of instructor.

693 Individual Studies U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694 Group Studies U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

7221 Studies in Italian Literature: 14th Century U 3
Intensive study of one author, major work, or topic such as historiography, poetics and poetry, Le Vita Nova, reading in relevant criticism and scholarship.
Sp Qtr. 3 cl. Prereq: Grad standing or by permission of instructor to 5 hrs majoring in Italian with credit for 621, 622, or equiv.

725 Studies in Italian Literature: 15th and 16th Centuries U 3
Intensive study of one author, major work, or topic such as epic poetry, the Courteur, Poliziano; readings in relevant criticism and scholarship.
Au Qtr. 3 cl. Prereq: Grad standing or by permission of instructor to 5 hrs majoring in Italian with credit for 625 or equiv.

7261 Studies in Italian Literature: 17th and 18th Centuries U 3
Intensive study of one author, major work, or topic such as baroque poetry, Tasso, Alfieri's theatre; readings in relevant criticism and scholarship.
Au Qtr. 3 cl. Prereq: Grad standing or by permission of instructor to 5 hrs majoring in Italian with credit for 626 or equiv.

H783 Honors Research U 3-5
A program of individual study for undergraduate honors students; includes individual conferences and reports; requires presentation and oral defense of an honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: Approval; 4th yr standing with at least a 3.50 cumulative pt-hr ratio in Italian; written permission of instructor under whose supervision the work is to be completed, and of the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

792* Interdepartmental Studies in the Humanities U 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

801 Teaching Italian at the College Level U 5
Methods and techniques for teaching Italian language at the college level.
Au Qtr. Two 4-week intensive workshop sessions to the beginning of qtr followed by a 2-hr wkly cl. Prereq: Teaching associate in the Dept of French and Italian or permission of instructor. Not open to students with credit for Ed TAP 801.02. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs. Cross-listed in Educational Theory and Practice as 801.02.

Italian 221
811T History of the Italian Language: Introduction G 5
Basic concepts of historical linguistics; the major factors of change in the history of the Italian language from Roman times to the present.
Wi Qtr. 4-5 cl. Prereq: MA candidates in Italian, others by permission of instructor.

830 Seminar in Italian Linguistics G 5
Detailed exploration of selected topics in Italian linguistics with extensive analysis of Italian language data relevant to the topic.
Au Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

832 Seminar in Italian Literature G 2-5
Wi Qtr. 2 or 5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

833 Seminar in Italian Literature G 2-5
Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

885 Introduction to Methods in the History and Criticism of Literature G 5
Selected readings in basic literary history, criticism, and theory, with practice in the use of standard bibliographical aids to scholarship.
Au Qtr. 4 or 5 cl.

893 Individual Studies G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies G 1-15
Investigation of minor problems in the various fields of Italian literature and language.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

899 Interdepartmental Seminar G 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

999 Research in Italian Language or Literature G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Japanese

204 Cunz Hall, 1841 Millikan Road, 292-5816

101 First Year Japanese I
Elements of standard colloquial Japanese grammar, with intensive oral and written exercises; introduction to the Japanese writing system (hiragana, katakana, and kanji).
Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study of this language in high school, except by permission of dept. GEC for lang courses. FL, Admis Cond courses.

101.01 Classroom Track U 5
Au Qtr. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

102 First Year Japanese II
Continuation of 101.
Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL, Admis Cond course.

102.01 Classroom Track U 5
Wi Qtr. 5 cl. Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

103 First Year Japanese III
Continuation of 102.
Not open to students with credit for 103; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.01 Classroom Track U 5
Sp Qtr. 5 cl. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

103.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Prereq: 102 or 102.01 or 5 cr hrs of 102.51. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 104. Progress is sequential from one cr hr to the next with a demonstrated proficiency of 80% required for advancement to next level.

104 Second Year Japanese I U 5
Continuation of 103 with supplementary reading of selected graded texts.
Au Qtr. 5 cl. Prereq: 103 or 112 or equiv with written permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. This course available for EM credit. GEC for lang course.

110 Intensive First Year Japanese U 5, 10, or 15
An introductory course with emphasis on basic structure taught through oral-aural drills; hiragana, katakana, and a limited number of kanji; equivalent to 101, 102, and 103.
Su Qtr. Prereq: Permission of instructor. Full-time fees required regardless of number of cr hrs. Equiv of 101, 102, 103. Not open to students with maximum allowable credit for 112. Students may not register for any other course if they enroll in 112. Students with credit for 103 or equiv may not register for credit. Students with credit for 101 and 102 will enroll for 5 or 10 cr hrs. Students with credit for 101 will enroll for 10 cr hrs. Students with no credit in Japanese will enroll for 15 cr hrs. Regardless of cr hrs enrolled a student will attend class throughout entire qtr. Withdrawal from the course means forfeiture of all cr hrs. FL, Admis Cond course. GEC for lang course.

205 Second Year Japanese II U 5
Continuation of 104 with a shift in emphasis from the spoken to the written language; reading of selected graded texts, writing, and composition.
Wi Qtr. 5 cl. Prereq: 104 or equiv with written permission of instructor. This course is available for EM credit.

206 Second Year Japanese III U 5
Continuation of 205.
Sp Qtr. 5 cl. Prereq: 205 or equiv with written permission of instructor. This course is available for EM credit.

210 Intensive Second Year Japanese I: Spoken U 5
First course in the sequence of intensive Japanese courses; organized around a set of videotaped core conversations.
Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 211. Not open to students with credit for 104, 111, or 205. Students must register for 210 and 211 concurrently.

211 Intensive Second Year Japanese II: Written U 5
Second course in the sequence of intensive Japanese courses; organized around Reading Japanese and a series of genre-specific samples of Japanese as it is written today.
Au Qtr. 5 cl. Prereq: 103 or equiv, or permission of instructor; concur: 210. Not open to students with credit for 104 or 205. Students must register for 210 and 211 concurrently.

231 Elements of Japanese Culture U 5
A survey of literature, art, religion, philosophy, and social institutions of the Japanese people from the earliest to the most recent times.
Su, Au, Wi, Sp Qtrs. 5 cl. Taught in English. GEC arts and hums cultures and ideas course.

251 Japanese Literature in Translation U 5
Representative masterpieces from Japanese literature: fiction, drama, poetry, prose. Taught in English.
Au, Wi, Sp Qtrs. 5 cl. GEC arts and hums lit course.

252 Modern Japanese Literature in Translation U 5
Modern Japanese literature from late 19th century through contemporary writers; selected readings in English translation with emphasis on Tanizaki, Kawabata, and Miyama.
Wi, Sp Qtrs. 5 cl. GEC arts and hums lit course.

293 Individual Studies U 1-5
Individual investigation of problems in Japanese culture, language, and literature.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

294 Group Studies U 1-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>310</td>
<td>Intensive Second-Year Japanese I: Spoken</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>3rd course in the sequence of intensive intermediate Japanese courses; organized around a set of videotaped core conversations.</td>
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<td></td>
<td>Wi Qtr. 5 cl. Prereq: 104 and permission of instructor, or 210. Not open to students with credit for 205. Students must register for 310 and 311 concurrently.</td>
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<tr>
<td>311</td>
<td>Intensive Second-Year Japanese II: Written</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>4th course in the sequence of intensive intermediate Japanese courses; organized around a set of genre-specific samples of Japanese as it is written today and integrated with 310 in structure and vocabulary.</td>
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<td>Wi Qtr. 5 cl. Prereq: 211 or equiv, or permission of instructor, or concurrent credit for 310. Not open to students with credit for 205. Students must register for 310 and 311 concurrently.</td>
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<tr>
<td>501</td>
<td>Japanese Literature in Critical Perspective</td>
<td>U G 5</td>
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<td>Au, Wi, Sp Qtrs. 2 3/4 hr. Prereq: 251 or 252 or equiv, or permission of instructor.</td>
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<tr>
<td>507</td>
<td>Third Year Japanese I</td>
<td>U G 5</td>
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<td>Readings in modern Japanese aimed at acquisition of control of the 1850 characters in common use; translation, composition, character drill.</td>
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<td>Au Qtr. 5 cl. Prereq: 206 or equiv with written permission of instructor.</td>
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<tr>
<td>508</td>
<td>Third Year Japanese II</td>
<td>U G 5</td>
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<td></td>
<td>Continuation of 507; supplementary readings in short stories and standard reference works.</td>
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<td>Wi Qtr. 5 cl. Prereq: 507 or equiv with written permission of instructor.</td>
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<tr>
<td>509</td>
<td>Third Year Japanese III</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>Continuation of 508.</td>
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<td></td>
<td>Sp Qtr. 5 cl. Prereq: 508 or equiv with written permission of instructor.</td>
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<tr>
<td>510</td>
<td>Intensive Third Year Japanese I: Spoken</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>5th course in the sequence of intensive intermediate spoken Japanese; uses audio, video, and textual materials produced for native consumption.</td>
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<td>Sp Qtr. 5 cl. Prereq: 311 or equiv, or permission of instructor, or concurrent credit for 511. Students must register for 510 and 511 concurrently.</td>
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<tr>
<td>511</td>
<td>Intensive Third Year Japanese II: Written</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>6th course in the sequence of intensive intermediate written Japanese; moves from pedagogically planned texts to genres written today for native consumption.</td>
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<td>Sp Qtr. 5 cl. Prereq: 510 or equiv, or permission of instructor, or concurrent credit for 510. Students must register for 510 and 511 concurrently.</td>
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<tr>
<td>514</td>
<td>Advanced Japanese Conversation</td>
<td>U 3</td>
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<td></td>
<td>Lectures, discussion, reports; extensive use of taped materials including news broadcasts, drama, interviews, informal conversations; conducted entirely in Japanese.</td>
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<td>Au, Wi, Sp Qtrs. 3 3/4 hr. Prereq: 104 or permission of instructor. Repeatable to a maximum of 12 cr. hrs.</td>
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<tr>
<td>601</td>
<td>Classical Japanese I</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>Classical written language with emphasis on its structure; reading and analysis of selected pre-modern literary texts.</td>
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<td>Au Qtr. 5 cl. Prereq: 509 or equiv.</td>
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<tr>
<td>602</td>
<td>Classical Japanese II</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>Continuation of 601.</td>
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<td>Wi Qtr. 5 cl. Prereq: 601 or equiv.</td>
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<tr>
<td>603</td>
<td>Classical Japanese III</td>
<td>U G 5</td>
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<td></td>
<td>Continuation of 602.</td>
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<td></td>
<td>Sp Qtr. 5 cl. Prereq: 602 or equiv.</td>
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<tr>
<td>610</td>
<td>Fourth Year Japanese I</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>Selected readings in modern literary, scholarly, and journalistic Japanese; essentially a language course intended to improve fluency.</td>
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<td></td>
<td>Au Qtr. 5 cl. Prereq: 509 or permission of instructor. Not open to students with credit for 661.</td>
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<tr>
<td>611</td>
<td>Fourth Year Japanese II</td>
<td>U G 5</td>
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<td></td>
<td>Continuation of 610.</td>
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<td></td>
<td>Wi Qtr. 5 cl. Prereq: 660 or permission of instructor. Not open to students with credit for 662.</td>
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<tr>
<td>612</td>
<td>Fourth Year Japanese III</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>Continuation of 611.</td>
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<td></td>
<td>Sp Qtr. 5 cl. Prereq: 611 or permission of instructor. Not open to students with credit for 663.</td>
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<tr>
<td>641</td>
<td>The Japanese Religious Tradition</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, Neo-Confucianism, and folk religion from the 6th century B.C.E. to the present.</td>
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<td></td>
<td>Wi Qtr. 2 hr. cl. Prereq: Permission of instructor. Not open to students with credit for Rel Studs 641. Cross-listed in Religious Studies.</td>
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<tr>
<td>654</td>
<td>Japanese Literature: Classical Period</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>Survey of Japanese literature from the eighth to the mid-fourteenth century: myths, court poetry, tales, fiction, diaries, and miscellanies.</td>
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<td></td>
<td>Au Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.</td>
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<tr>
<td>655</td>
<td>Japanese Literature: Medieval and Edo Periods</td>
<td>U G 5</td>
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<tr>
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<td>Survey of Japanese literature from the mid-fourteenth to the mid-nineteenth century: popular tales, poetry, drama, and the fiction of the merchant class.</td>
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<td></td>
<td>Wi Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.</td>
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<tr>
<td>656</td>
<td>Japanese Literature: Modern Period</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>Survey of Japanese poetry, fiction, and drama from the 19th century to the present.</td>
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<td></td>
<td>Sp Qtr. 5 cl. Prereq: 231 or 251 or 252, or another Japanese literature course at the 200 level or above.</td>
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<tr>
<td>660</td>
<td>Introduction to Japanese Linguistics</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>An introduction to the phonology, syntax, and lexicon of the Japanese language.</td>
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<td>Au Qtr. Prereq: 103 or 103.01 or 5 or 6 hrs of 103.51, and Linguist 601; or permission of instructor.</td>
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<tr>
<td>661</td>
<td>History of the Japanese Language</td>
<td>U G 5</td>
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<tr>
<td></td>
<td>A survey of the development of the Japanese language from early times to the present.</td>
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<td></td>
<td>Sp Qtr. Prereq: 103 or 103.01 or 5 or 6 hrs of 103.51, and Linguist 601; or permission of instructor.</td>
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<tr>
<td>693</td>
<td>Individual Studies</td>
<td>U G 1-5</td>
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<td></td>
<td>Requires the use of Japanese sources and the completion of a paper reflecting the student's research.</td>
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<td>Su, Au, Wi, Sp Qtrs. Prereq: 509 or 633, and written permission of instructor. Repeatable to a maximum of 15 cr. hrs. Not a substitute for regular language courses. This course is graded S/U.</td>
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<tr>
<td>694</td>
<td>Group Studies</td>
<td>U G 1-5</td>
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<td>Investigation of minor problems in Japanese language and literature.</td>
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<td>Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr. hrs. Not a substitute for regular language courses.</td>
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<tr>
<td>698</td>
<td>Study Tour</td>
<td>U G 1-15</td>
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<td>Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.</td>
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<td>Prereq: Permission of instructor. Repeatable for different titled study tours only.</td>
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<td>698.01 Domestic</td>
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<td>698.02 Foreign</td>
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<tr>
<td>700</td>
<td>Learning Japanese in Cross-Cultural Contexts: College Level</td>
<td>G 5</td>
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<tr>
<td></td>
<td>Conditions for learning Japanese at the post-secondary level from a cross-cultural perspective.</td>
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<td></td>
<td>Su Qtr. 6 cl. Prereq: High level competency in Japanese; concurrent registration in 703 and 704 or permission of instructor. Repeatable to a maximum of 10 cr. hrs. This is part of a Teacher Training Institute to begin in Su 95 in collaboration with Exchange, .a.p.n., a non-profit organization.</td>
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<tr>
<td>703</td>
<td>Presentation of Japanese Language and Culture: College Level</td>
<td>G 5</td>
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<td></td>
<td>The creation and management of learning environments for Japanese taught in non-Japanese cultural contexts at the post-secondary level.</td>
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<tr>
<td></td>
<td>Su Qtr. 6 cl. Prereq: High level competency in Japanese; concurrent registration in 703 and 704 or permission of instructor. Repeatable to a maximum of 10 cr. hrs. This is part of a Teacher Training Institute to begin in Su 95 in collaboration with Exchange, Japan, a non-profit organization.</td>
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<tr>
<td>704</td>
<td>Practicum in Japanese Language and Culture: College Level</td>
<td>G 5</td>
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<td>Observations, discussions, and analysis of Japanese language and culture lessons taught by master teachers and trainees at the post-secondary level.</td>
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<td></td>
<td>Su Qtr. 6 cl. Prereq: High level competency in Japanese and permission of instructor. Repeatable to a maximum of 10 cr. hrs. This is part of a Teacher Training Institute to begin in Su 95 in collaboration with Exchange, Japan, a non-profit organization.</td>
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</table>
711 Learning Japanese in Cross-Cultural Contexts: High School Level G 3
Conditions for learning Japanese at the secondary level from a cross-cultural perspective.
Su Qtr. 5 cr per week/6 wks. Prereq: Intermediate to high competency in Japanese and concurrent registration in 713 and 714. Repeatable to a maximum of 6 cr hrs. This is part of a Teacher Training Institute to begin in Su 95 in collaboration with Exchange: Japan, a non-profit organization.

713 Presentation of Japanese Language and Culture: High School Level G 3
The creation and management of learning environments for Japanese taught in non-Japanese cultural contexts at the secondary level.
Su Qtr. 6 cr per week/6 wks. Prereq: Intermediate to high competency in Japanese and concurrent registration in 711 and 714. Repeatable to a maximum of 6 cr hrs. This is part of a Teacher Training Institute to begin in Su 95 in collaboration with Exchange: Japan, a non-profit organization.

714 Practicum in Japanese Language and Culture: High School Level G 3
Observations, discussions, and analysis of Japanese language and culture lessons taught by master teachers and trainees at the secondary level.
Su Qtr. 6 cr per week/6 wks. Prereq: Intermediate to high competency in Japanese and concurrent registration in 711 and 714. Repeatable to a maximum of 6 cr hrs. This is part of a Teacher Training Institute to begin in Su 95 in collaboration with Exchange: Japan, a non-profit organization.

720 Level 5 Japanese I G 5 Aims to increase rhetorical sensitivity and skill in a variety of genres of present-day Japanese discourse, both spoken and written.
3-5 hrs group work, 0-2 hrs (5 hrs/week total) tutorial. Prereq: 612 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs.

721 Level 5 Japanese II G 5 Aims to increase rhetorical sensitivity and skill in a variety of genres of present-day Japanese discourse, spoken and written; builds on Japanese 720.
Wi Qtr. 5 cr or 3 cr 2 hrs tutorial. Prereq: 720 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs.

722 Level 5 Japanese III U G 5 Aims to increase rhetorical sensitivity and skill in a variety of genres of present-day Japanese discourse, both spoken and written.
Sp Qtr. 3-5 hrs group work, 0-2 hrs tutorial (5 hrs/week total). Prereq: 721 or equiv and permission of instructor. Repeatable to a maximum of 10 cr hrs.

751* Studies in Japanese Poetry U G 5 Critical studies in Japanese poetry; survey of poetic forms, techniques, and aesthetics; concentration on a specific collection, poet, or coterie; topic varies.
Au Qtr. 5 cr. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

752* Studies in Japanese Prose Literature U G 5 History and critical study of myths, early tales, diaries, chronicles, setsuwa, miscellaneous, medieval tales, Edo fiction, or the modern novel, topic varies.
Wi Qtr. 5 cr. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

753* Studies in Japanese Drama U G 5 History and texts of Japan's dramatic literature; no, kyogen, kowaka-mai, bunraku, kabuki, shinsei shima, shingeki, rakugo; topic varies.
Sp Qtr. 5 cr. Prereq: 601, 654, 655, and 656; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Sp Qtr. 3 cr. Prereq: 680, 681, or permission of instructor.

783 Honors Research U 3-5 A program of reading arranged for each student, with student conferences, reports, and honors thesis.
Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a record of A in at least half of the Japanese courses taken and an average of B in all courses; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Open only to candidates for BA in Japanese. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

Au, Wi, Sp Qtrs. 5 cr. Prereq: 580 or permission of instructor.

786 Japanese Pragmatics U G 5 Introduction to pragmatic aspects of the Japanese language.
Wi Qtr. 2-3 cr. Prereq: 680 or Linguist 601 or permission of instructor.

Au, W, Sp Qtrs. 2-3 cr. Prereq: 680 or permission of instructor.

792 Interdepartmental Studies in the Humanities U G 3-5 Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

800 Japanese Bibliography and Research Methods G 5 Problems and procedures in the use of Japanese bibliographies and other reference materials.
Au Qtr. 2 cr. Prereq: 609 or permission of instructor.

801 Teaching Japanese at the College Level U G 5 Methods and techniques of teaching college-level Japanese, selection and preparation of teaching, testing, and laboratory materials; observation of a variety of language classes.
Au Qtr. Two wk intensive workshop previous to qtr followed by 2-3 hrs wkly cl. Prereq: Permission of instructor. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs.

877 Topics and Problems in Japanese Literature G 3-5 Readings in the major genres of Japanese literature with emphasis on analysis and critical evaluation.
Sp Qtr. 3 cr. Prereq: 603 or 665, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

879 Seminar in Japanese Literature G 3-5 Au, Wi, Sp Qtrs. Prereq: 603 or 665, and written permission of instructor. Repeatable to a maximum of 15 cr hrs.

887 Topics and Problems in Japanese Linguistics G 3-5 A detailed investigation of specific problems in the phonological, syntactical, and lexical analysis of the Japanese language.
Sp Qtr. 206 and 680. Repeatable to a maximum of 25 cr hrs.

899 Interdepartmental Seminar G 3-5 Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 99 cr hrs. This course is graded S/U.

Jewish Studies
306 Dulles Hall, 230 West 17th Avenue, 292-9067

201* Introduction to Jewish Studies U 3 An introduction to the historical, ideological, and cultural growth of Judaism examined from a variety of methodological perspectives.
2 cr. Prereq: 201 and 15 cr hrs in Jewish Studies; or permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

489 Jewish Studies Internship U 1-5 Community work with agencies and organizations serving the Jewish population; evaluation of policy decisions from a Jewish perspective.
Au, Wi, Sp Qtrs. 1 cr per 3 hrs per week for 10 weeks at placement agency. Prereq: 201 and 15 cr hrs in Jewish Studies; or permission of instructor. Repeatable to a maximum of 5 cr hrs. This course is graded S/U.

498 Study Tour U 1-15 Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Au Qtr. Prereq: Permission of instructor. Repeatable for differently titled study tours.
613 The American Jewish Experience: Life and Culture G 3 or 5
An interdisciplinary approach using history, literature, sociology, and the arts to study about American Jewish life.
Su, Qtr. Arr, Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.

692 Workshop U G 1-8
Arr. Prereq: Permission of workshop director. Repeatable to a maximum of 15 cr hrs.

694 Group Studies U G 1-5
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of Melton Center Director. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

Journalism
211 Journalism Building, 242 West 18th Avenue, 292-6291
see also Journalism and Communication.

Journalism and Communication
3016 Derby Hall, 154 North Oval Hall, 292-3400

101 Introduction to Mass Communication U 3
Introduction to the mass media in America, especially newspapers and broadcasting; analysis of forces and institutions affecting media behavior, and the resulting quality of performance.
3 cr, Prereq: English 110 or 111 or equiv. Not open to students with credit for Journal 101. SS Admins Cond course.

105 Communication of Ideas and Attitudes U 5
Analysis, formulation, organization, development, and delivery of ideas and attitudes for speaking with an audience.
5 cr. Not open to students with credit for Communc 105. VPA Admins Cond course.

110 Small Group Communication U 5
Designed to help the student develop the skills necessary for effective communication in the small group by providing task related group activities.
5 cr. Not open to students with credit for Communc 110. VPA Admins Cond course.

140 Living in the Information Age U 5
Processes of electronic media and telecommunication, critical consumption of media, ethical issues and current media problems, and uses and abuses of telecommunication in society.
5 cr. Not open to students with credit for Communc 140. SS Admins Cond course.

200 Communication and Society U 5
Introduction to the history, theory, and research of communication studies.
3 1/2 cr. Not open to students with credit for Communc 200 or 317.

201 Basic Reporting and News Writing U 4
Reporting and writing news and features for the print and electronic media.
Su, Au, Wi, Sp Qtrs. 4 2-hr cl. Prereq: 101 or Journal 101; typng ability required. Not open to students with credit for Journal 201.

202 Advanced Reporting and News Writing U 3
Continuation of 201 with emphasis on more complicated reporting and news writing.
Su, Au, Wi, Sp Qtrs. 1 cr, 2 2-hr labs. Prereq: 201 or Journal 201 and enrollment in Journal or permission of instructor. Not open to students with credit for Journal 202.

222 Reporting and News Writing for Broadcast U 3
Reporting and writing in broadcast news writing style; emphasis on gathering information for delivery through written communication meant to be heard rather than read.
1 cr, 2 2-hr labs. Prereq: 201 or Journal 201 and enrollment in Journal or permission of instructor. Not open to students with credit for Journal 222.

300 Rhetoric of Western Thought U 5
Rhetorical theories as they reflected and affected society from Greece to modern times; relations to logic, ethics, and poetics; the classical tradition versus sophistical concepts.
5 cr, H300 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: English 110 or 111 or equiv. Not open to students with credit for Communc 213 or 300.

302 Introduction to Rhetorical Analysis U 5
Survey of contemporary approaches to rhetorical criticism.
5 cr or 2 2 1/2-hr cl. Not open to students with credit for Communc 302.

303 Photojournalism U 3
Reporting the news with a camera; how to recognize, develop, and create picture stories; experience in coordinating words and news pictures; picture editing; layout.
2 cr, 1 2-hr lab. Prereq: 201 or Journal 201 or permission of instructor. Not open to students with credit for Journal 303.

304 Editing U 3
Editing of copy, headline writing, rewriting, and general copy desk work.
Au, Wi, Sp Qtrs. 2 cl, 2 2-hr lab. Prereq: 202 or Journal 202, VDT operation. Not open to students with credit for Journal 304.

305 Argumentation and Debate U 5
Principles of reasoned discourse and their application to controversial issues.
5 cr, H305 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: English 110 or 111 or equiv and soph standing. Not open to students with credit for Communc 305. GEG second writing course.

311 Graphics of Communication U 4
An introduction to visual and graphic communication in the print media, involving perception, typography, picture editing, and basic design skills.
Au, Wi, Sp Qtrs. 2 cl, 2 2-hr labs. Prereq: 20 or Journal 201 and enrollment in journal or permission of instructor. Not open to students with credit for Journal 311.

312 Communication Process U 5
A study of communication as a transactional process, with emphasis on an analysis of communication barriers and breakdowns which impede effective communication.
2 2-hr cl. Not open to students with credit for Communc 312.

313 Public Communication in the Age of Television U 5
The use of the television medium by political, religious, and occasional advocates with emphasis upon the development of critical standards for viewers.
3 cr, 2 hrs arr. Not open to students with credit for Communc 313.

314 Rhetoric of Black Americans U 5
Examination of the rhetoric of black Americans in connection with such strategies as assimilation, separation, and evolution, to establish a role or identity in American society.
4 cr, Prereq: English 110 or 111 or equiv and soph standing. Not open to students with credit for Communc 314.

316 The Rhetoric of American Issues U 5
A study of selected political, social, and religious issues and the principal American spokespersons and audiences associated with them from 1787 to the present.
2 cr, 1 2-hr cl. Prereq: English 110 or 111 or equiv, and soph standing. Not open to students with credit for Communc 316. GEG second writing course.

324 Interpersonal Communication U 5
Analysis of dimensions and relationships in interpersonal communication, especially needs, perceptions, orientations, contexts, and barriers; exercises, demonstrations, and applications to students' own experiences.
5 cr. Not open to students with credit for Communc 324.

328 Persuasive Communication U 5
Introduction to the science of audience analysis and the development of written persuasive messages; analysis of persuasion in the media and interpersonal settings.
2 2-hr cl. H328 (honors) may be available to students enrolled in an honors program or by permission of dept honors committee chairperson. Not open to students with credit for Communc 328.

331 Communication and the Task-Oriented Group U 5
The communication processes necessary for small groups to effectively accomplish tasks.
2 2-hr cl. Not open to students with credit for Communc 331.
332 Communication and Gender in Interpersonal and Organizational Settings U 5
An examination of the role of communication in creating and holding into place stereotypical sex differences in interpersonal and organizational communication settings.
2-2 hr. cl. Not open to students with credit for Commun 332.

335 Organizational Communication U 5
Major organizational communication concepts and theories; application of theories to organizational communication practices through the use of case studies.
2-2 hr. cl. Not open to students with credit for Communic 335.

340 Introduction to Telecommunication and Electronic Media Technologies and Industries U 5
Basics of telecommunication and electronic media technologies; evolution and innovation of technologies; markets for new and existing services; U.S. and international dimensions of systems.
2-2 hr. cl. Not open to students with credit for Communic 340.

341 Introduction to Telecommunications and Electronic Media Theories and Policies U 5
Theoretical bases for understanding telecommunication and electronic media, mechanisms for the formulation and implementation of policy; social impact of media systems.
2-2 hr. cl. Not open to students with credit for Commun 341.

350 Introduction to Creating Electronic Messages U 5
Introduction to basic theory and concepts of video and audio production within a context of critical analysis; technical skill development and aesthetic appreciation.
3 1/2 hr. cl. Not open to students with credit for Commun 350.

352 Communication, Gender, and Society U 5
An examination of the role of communication in creating and holding into place societally accepted gender identities.
2-2 hr. cl. Not open to students with credit for Commun 352.

364 Communication for National Development and Change U 5
An examination of the role of communication for national development and change, primarily in Third World settings.
2-2 hr. cl. Not open to students with credit for Commun 364.

366 Communication and Popular Culture U 5
An examination from the perspective of communication as a form of popular culture and issues related to the communication of popular culture.
2-2 hr. cl. Not open to students with credit for Commun 366.

368 Intercultural Communication in Organizational Contexts U 5
An examination of the role of intercultural communication in organizational contexts and the attendant effects on the communication and transmission of cultural consciousness, knowledge, tradition, and practices.
2-2 hr. cl. Not open to students with credit for Commun 368.

412 Reporting and Writing for Television U 3
Reporting and editing for the news film medium, writing for the news film and newscast; practice in television news production and newscasting.
2-2 hr. cl. lab hr. Prereq: 222 or Journal 222 and enrollment in journalism. Not open to students with credit for Journal 412.

421 Journalism Laboratory—News Editorial U 3
Reporting, editing, and photojournalism, primarily of the Lantern. Su, Au, Wi, Sp Qtrs. No more than a total of 9 cr. hrs may be earned in any combination of decimal subdivisions of 421 and 422 and/or Journal 421 and 422; subdivisions not repeatable. Students taking these courses are required to return to campus prior to the start of classes each qtr.
421.01 Reporting
Prereq: 202 or Journal 202.
421.02 Editing
Prereq: 304 or Journal 304.
421.03 Photojournalism
Prereq: 303 or Journal 303 and permission of instructor. Provide own 35MM camera or $100 deposit for use of one.

422 Radio and Television News Laboratory U 3
Reporting and editing news primarily for radio and television programs. No more than a total of 9 cr. hrs may be earned in any combination of decimal subdivisions of 421 and 422, and/or Journal 421 and 422; subdivisions not repeatable.
422.03 Television
Prereq: 412 or Journal 412.

431 Public Relations Principles U 3
Origin and development of public relations, including ethical standards and functional role in modern society; basic principles of public relations theory, philosophy, and operation.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Jr or sr standing. Not open to students with credit for Journal 431.

432 Case Studies in Public Relations U 3
Specific case studies designed for internal and external audiences; organization, administration of programs and departments; analysis of techniques, channels, media, and applicable research methods.
3 cl. Prereq: 431 or Journal 431. Not open to students with credit for Journal 432.

450 Production Processes in Telecommunication U 5
Intermediate study of the planning, production and directing processes of creating video and audio messages; and emphasis on the producer's director/editor's functions in organizing and executing mediated messages.
3 1/2 hr. cl. Prereq: 350 or Commun 350. Not open to students with credit for 450.

4601 Theories of Communication in Culture and Society U 5
An examination of communication studies guided by such contemporary theories as psychoanalysis, semiotics, phenomenology, Marxism, and feminism.
2-2 hr. cl. Not open to students with credit for Commun 460. GEC third writing course.

489 Journalism Field Experience U 3
An out-of-class supervised field experience for advanced journalism majors. These courses are graded S/U.

489.02 Radio-Television
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr or sr standing and permission of instructor. Repeatable to a maximum of 6 cr. hrs, including cr. hrs earned in Journal 489.02.

489.05 Public Relations Internship
Au, Wi, Sp Qtrs. Arr. Prereq: 202 or Journal 202, and 431 or Journal 431, or permission of instructor. Not open to students with credit for Journal 489.05.

494 Group Studies U 1-5
Regular class meetings and group discussion of specified problems.
Su, Au, Wi, Sp Qtrs. Prereq: Soph standing or above. Repeatable to a maximum of 15 cr. hrs.

505 Presentational Speaking in the Organization U G 5
The theory and practice of planning, preparing, and transmitting formal position statements in settings of organizational decision-making.
2-2 hr. cl. A section taught by a faculty member will be offered Sp Qtr for grad students. Not open to students with credit for Commun 505.

5121 Communication, Images, and Action U G 5
The interplay between interpersonal communication systems and technologies from a current as well as an historical perspective.
2-2 hr. cl. Prereq: Commun major and 15 hrs of Commun of J com work at the basic-knowledge level, including 350 or Commun 350; or grad standing; or permission of instructor. Not open to students with credit for Commun 512.

531 Communication and Conflict Management U G 5
An overview of the communication and conflict literature with emphasis on effective conflict management.
2-2 hr. cl. Prereq: Commun major and 15 hrs of commun or J com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commun 531.

550 Advanced Production Processes in Telecommunication U 5
Planning, producing, and directing video and audio messages; emphasizes the media producer's function of organizing production elements to meet externally-specified (client-defined) program objectives.
1-4 hr. cl. Prereq: Commun major and 15 hrs of commun or J com course work at the basic-knowledge level; including 450 or Commun 450; or grad standing; or permission of instruction. Not open to students with credit for Commun 550.

571 Basic Journalism for Beginning Graduate Students G 6
Introduction to gathering facts and writing news stories for the media, with attention given to substantive reporting at the local level; libel and fair play.
Au Qtr. 3 cl. 2-2 hr labs. Prereq: Grad standing and permission of instructor. Credit does not apply to the minimum hrs required for grad study in journal. Not open to students with credit for Journal 571.

602 Magazine Writing U G 3
Non-fiction writing for magazines, commercial and industrial, emphasis on the non-technical full-length magazine article. 3 cl. Prereq: 202 or Journal 202 or permission of instructor or grad standing. Not open to students with credit for Journal 602.
604 Ethics of Communication U G 5
Lectures, discussions, assimilations, and case studies focus on the nature, roles, and functions of ethics in communication in response to major topics and questions.
2 2-hr cl. Prereq: English 110 or 111 or equiv. Not open to students with credit for Comm 504. GEC third writing course.

605 Advanced Argumentation U G 5
Intensive argumentative writing and oral defense; controversial issues and texts provide materials for invention and evaluation of ethical, political, legal, medical, and other practical arguments.
2 2-hr cl. Prereq: 305 or Commun 305, or grad standing. Not open to students with credit for Commun 605. GEC third writing course.

606 Development of the Mass Media in America U G 5
Major currents and trends basic in the shaping of the mass media; famous personalities, foundations, and evolution of a free, responsible press.
Au, Wi, Sp Ctrs. 2 2-hr cl. H605 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: Jr, sr, or grad standing in journal; or permission of instructor. Not open to students with credit for Journal 605.

607 Law of the Press, Radio, and Television U G 5
History, principles, and provisions of the law of libel, slander, copyright, and other statutes affecting newspapers, other publications, and broadcasting.
Au, Wi, Sp Ctrs. 2 2-hr cl. H607 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: Jr or sr or grad standing in journal; or permission of instructor. Not open to students with credit for Journal 607.

609 Mass Media Science Reporting U G 3
Emphasis on information gathering and writing skills appropriate to communicating science to nonscientists; analysis of the state of the art of science reporting in U.S. mass media.
1 3-hr cl. Prereq: 2010 or Journal 201 or permission of instructor. Not open to students with credit for Journal 609.

610 Legal Reasoning U G 5
A study of rhetorical strategies used for deliberation, justification, and persuasion in a variety of legal contexts.
2 2-hr cl. Prereq: English 110 or 111; or grad standing; or permission of instructor. Not open to students with credit for Commun 610. GEC third writing course.

611 Newspaper Design U G 3
Application of design techniques to the modern newspaper, emphasis on analysis of contemporary newspaper format and its evolution.
1 3-hr cl. Prereq: 311 or Journal 311 or permission of instructor. Not open to students with credit for Journal 611.

621 Reporting Public Affairs U G 5
Instruction and practice in reporting the news of government, the courts, politics, education, finance, intergovernmental relations, political public opinion, and urban affairs.
2 2-hr cl. Jr off-campus field experiences. Prereq: 421.01 or Journal 421.01 or 422.01 or Journal 422.01, and Jr, or sr, or grad standing. Not open to students with credit for Journal 621 or 641.

622 Reporting Public Affairs for Radio and Television U G 3
Instruction and practice in reporting the news of government, the courts, politics, education, finance, intergovernmental relations, political public opinion, and urban affairs.
2 2-hr cl, lab arr. Prereq: 422.03 or Journal 623. Not open to students with credit for Journal 622.

623 Writing of Reviews and Criticisms U G 3
Study of the work of the dramatic and literary critic, especially on newspapers and magazines; practice in writing reviews and criticisms.
Prereq: Jr or sr or grad standing or permission of instructor. Not open to students with credit for Journal 623.

624 Communication in Personal Relationships U G 5
Advanced level survey of theory and research concerning the role of communication in the development, maintenance, and decay of interpersonal relationships.
2 2-hr cl. Prereq: Commun major and 15 hrs of commun or JComm course work at the basic-knowledge level, including 324 or Commun 324; or grad standing; or permission of instructor. Not open to students with credit for Commun 624.

625 Investigative Reporting U G 5
Intensive instruction in investigative reporting techniques, including Internet research, computer-assisted reporting, public records strategies, advanced story structure, series packaging for print and broadcast, and ethics.
2 2-hr cl, Jr off-campus field experiences. Prereq: 621 or Journal 621, or 622 or Journal 622, or permission of instructor. Not open to students with credit for Journal 625.

626 Media Management U G 3
Exploration of the specific functions and problems of the media manager; study of the structure of newspapers and broadcast stations.
3 cl. Prereq: Journal 44th yr standing or permission of instructor. Not open to students with credit for Journal 626.

628 Contemporary Persuasion Theory U G 5
Persuasive campaigns in mass audience settings; persuasion in interpersonal contexts, including organizations, family, and personal relationships.
2 2-hr cl. Prereq: Commun major and 15 hrs of commun or JComm course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commun 628.

629a Topics in the Structure and Functions of Conversation U G 5
The functions and organizing principles of communication in various contexts; implications for competent communication; and experience in analyzing talk.
2 2-hr cl. Prereq: Commun major and 15 hrs of commun or JComm course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commun 629a.

631 Communication in Decision Making U G 5
Decision-making as a process; comparisons between interpersonal, bargaining-negotiation contexts, and groups and organizations; descriptive and prescriptive models of decision-making in small groups and organizations.
4 cl. Prereq: Commun major and 15 hrs of commun or JComm course work at the basic-knowledge level, including 331 or Commun 331; or grad standing; or permission of instructor. Not open to students with credit for Commun 631.

634 Writing for Public Relations Projects U G 3
Writing and editing for public relations projects; identifying special audiences and tailoring material to their interests; writing for broadcast and print, in-house, and mass media.
2 2-hr cl. Prereq: 202 or Journal 202, and 431 or Journal 431; or permission of instructor. Not open to students with credit for Journal 634.

635 Organizational Communication: Microperspectives U G 5
Major organizational communication concepts and theories at individual, dyadic, and group levels of analysis; focus on intraorganizational communication processes.
1 3-hr cl. Prereq: Commun major and 15 hrs of commun or JComm course work at the basic-knowledge level, including 335 or Commun 335, or grad standing; or permission of instructor. Not open to students with credit for Commun 635.

636 Health Communication U G 5
Study of the relationship between health care and communication.
2 2-hr cl. Prereq: Commun major and 15 hrs of commun or JComm course work at the advanced-knowledge level, grad standing, or permission of instructor.

636.01 Health Communication in Interpersonal Contexts
Study of communication relevant to health care in various face-to-face contexts.
Not open to students with credit for Commun 636.01.

636.02 Health Communication in Mass Mediated Contexts
Overview of theory and research into the role of mass media as they affect the public's health behavior.
Not open to students with credit for Commun 636.02.

637 Public Relations Management and Strategy Development U G 3
Application of management techniques to public relations; public relations strategy; campaign development.
1 3-hr cl, arr consultations. Prereq: 431 or Journal 431, and sr standing; or permission of instructor. Not open to students with credit for Journal 635.

641 Public Broadcasting U G 5
History, theory, and criticism of public broadcasting; current trends and issues in programming, funding, audiences, and goals.
4 cl. Prereq: Commun major and 15 hrs of commun or JComm course work at the basic-knowledge level, including 340 or Commun 340 and 341 to Commun 341; or grad standing; or permission of instructor. Not open to students with credit for Commun 641.

642 Mass Communication and Society U G 5
Analysis of basic issues affecting media performance; especially social, cultural norms, organizational and broadcast variables, and the assessment of the effects of the resulting performance.
2 2-hr cl. Prereq: Sr or grad standing; or permission of instructor. Not open to students with credit for Journal 642.
643 International Communications and the World Press U G 5
Examination of international news communication systems and selected media concepts and the role they play in the political, economic, and cultural environments.
2-2 hr cl. Prereq: Jr or sr standing or permission of instructor. Not open to students with credit for Journal 464.

644 Advertising and Society U G 5
Examination of positive and negative contributions of advertising in the American mass media system to society from political, sociological, and economic perspectives.
Prereq: Jr or sr standing. Not open to students with credit for Journal 644.

648 History of Cartooning in American Newspapers U G 5
The history of newspaper cartooning in America; assessment of its role and impact.
Wi Qtr, 2-2 hr cl. Prereq: Journal major or grad standing or permission of instructor.

648.01 History of American Newspaper Comic Strips
History of American newspaper comic strips; assessment of their role and impact.
Not open to students with credit for Journal 648 or 648.01.

648.02 History of American Newspaper Political Cartoons
Examination of the history, purpose, form, and spirit of American newspaper political cartoons.
Not open to students with credit for Journal 648 or 648.02.

651 Media Research Methods U G 5
Overview of major empirical methods in media research; emphasis on survey research, with attention to other techniques such as experimentation, focus groups, and content analysis.
2-2 hr cl. Prereq: Jr or sr or grad standing or permission of instructor. Not open to students with credit for Comunic 440, or 651, or Journal 651.

652 Telecommunication and Electronic Media Policy U G 5
Survey of telecommunication policy issues: role of the public and industries; FCC, congress, and courts; emphasis on policy issues in broadcasting, cable, satellites, and telephone.
Prereq: Commuc major and 15 hrs of communication or J or Commuc course work at the basic-knowledge level, including 340 or Commuc 340 and 341 or Commuc 341; or grad standing; or permission of instructor. Not open to students with credit for Commuc 652.

653 International Telecommunication and Electronic Media U G 5
Socioeconomic and geopolitical contexts of national communication systems; management of communication interfaces and common resources; international organizations, legal regimes, and policy.
4 cl. Prereq: Commuc major and 15 hrs of communic or J or commuc course work at the basic-knowledge level, including 340 or Commuc 340 and 341 or Commuc 341; or grad standing; or permission of instructor. Not open to students with credit for Commuc 653.

654 Social Implications of Telecommunication and Electronic Media Structures U 5
Advanced study of a current topic in telecommunication and electronic media industry structures.
4 cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, including 340 or Commuc 340 and 341 or Commuc 341; or grad standing; or permission of instructor. Not open to students with credit for Commuc 654.

657 New Communication Technologies U G 5
Storage, transmission, and display systems of mediated communication: optical disc, common carriers, telecommunication-computer linkages, and high-definition TV; information industries and society.
4 cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, including 340 or Commuc 340 and 341 or Commuc 341; or grad standing; or permission of instructor. Not open to students with credit for Commuc 657.

658 Telecommunication and Electronic Media Services and Programming U G 5
Examination of the decision-making processes in electronic media organizations employing simulation techniques to illustrate decision-making under uncertainty.
4 cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, including 340 or Commuc 340 and 341 or Commuc 341; or grad standing; or permission of instructor. Not open to students with credit for Commuc 658.

659 Communication Systems and Society U 5
Advanced study of a current topic in the relationship between telecommunication and electronic media systems and society.
4 cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, including 657 or Commuc 657 or 658 or Commuc 656; or grad standing; or permission of instructor. Not open to students with credit for Commuc 659.

662 Contemporary Perspectives on Communication and Gender U G 5
Examination of contemporary communication theory, method, and practice relevant to women's communication.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 662.

664 Contemporary Perspectives on Communication and the Third World U G 5
An examination of recent communication theories and their implications for the role of communication in social change, particularly in Third World settings.
2-2 hr cl. Prereq: 460 or Commuc 460 or int stds major or grad standing, not open to students with credit for 664.

665 Communication and Community U G 5
A critical examination of communication linkages for building and maintaining communities.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 665.

666 Contemporary Perspectives on Communication and Popular Culture U G 5
Studies of cultural forms and popular communication using advanced communication theories based on semiotics, psychoanalysis, phenomenology, Marxist cultural theory, and feminist theory.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 666.

668 Contemporary Perspectives on Intercultural Communication in Organizational Contexts U G 5
An examination on insights provided by recent communication theories about the challenges and difficulties in organizational communication resulting when people of different cultures interact.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the advanced-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 668.

669 Communication, Power, and Knowledge U G 5
An analysis of communication breakdowns within the public sphere, focusing on the concept of distorted communication as it constitutes power and knowledge.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 669.

670 Qualitative Research in Communication Studies: Philosophic Perspectives U G 5
The philosophic underpinnings of qualitative approaches to scientific inquiry in communication research.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 670 or 780.01.

671 Qualitative Research in Communication Studies: Participant Observation U G 5
Intensive focus on participant observation as it is practiced in communication studies with emphasis on methodological issues, design, and implementation.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 660 or 671.

672 Qualitative Research in Communication Studies: The Interview U G 5
Theory and practice of qualitative interviewing approaches as used in communication studies; philosophic roots, the interview as communication, and theoretically guided application and implementation.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 593 or 672.

673 Qualitative Research in Communication Studies: Analyzing Texts and Documents U G 5
Theory and practice of communicative analysis of social/cultural texts and documents and the records produced by systematic observing and interviewing procedures.
2-2 hr cl. Prereq: Commuc major and 15 hrs of commun or J or commuc course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Commuc 667 or 673.
674 Qualitative Research in Communication Studies: Deconstructing Communication Theories U G 5
An uncovering of the ways in which theories of communication incorporate implicit and explicit images, assumptions and practices, using a variety of challenges and perspectives as deconstructing tools.
Prereq: Communication major and 10 hrs of Commuc or J com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communication 602 or 674.

675 Qualitative Research in Communication Studies: Communication Practice, Design, and Policy Lab U G 5
Qualitative communication research laboratory in which students working in teams conduct a study focusing on a question relating to communication practice, design, or policy.
2 2-hr or 1 4-hr cl. Prereq: One of 670 or Communication 670, 671 or Communic 71, 671 or Communic 673, 674 or Communication 674; or grad standing; or permission of instructor. Not open to students with credit for Communication 560 or 675.

680 Statistical Applications in Communication U G 5
Fundamental principles of statistics commonly used in communication research.
2-2 1-hr cl. Prereq: Communication major and 15 hrs of commuc or J com course work at the basic-knowledge level, or grad standing, or permission of instructor. Not open to students with credit for Communication 680.

683 Internship in Communication U G 1-5
On-the-job internships in communication practice or research conducted under supervision of internship coordinator through the undergraduate advising office.
Au, Wi, Sp, Qtrs. Prereq: 140 or Communic 140, 240 or Communic 240; Communic major and 15 crs of communic of J com course work at the basic-knowledge level; CPHR 2 of 2.5; and permission of instructor and commuc undergrad advisor; or grad standing. Repeatable to a maximum of 6 cr hrs, including cr hrs earned in Communication 260 and 683. This course is graded S/U.

693 Individual Studies U G 1-5
Students make extensive and significant studies in the field of journalism.
Su, Au, Wi, Sp Qtrs. Prereq: Journal 4th yr standing and permission of director, or grad standing and permission of instructor. No more than 5 cr hrs for undergrad and 6 cr hrs for grad students may be earned in any combination of 1 units. These courses are graded S/U.

693.01 News-Editorial
693.02 Radio and Television
693.03 Photojournalism
693.04 Magazines

693.05 Public Relations
693.06 Communication U G 1-5
Conference, library, and laboratory work.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in Communication 693. This course is graded S/U.

694 Group Studies U G 1-5
Regular class meetings and group discussions of specified problems.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 25 cr hrs, including cr hrs earned in Journal 694.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Au, Wi, Sp Qtrs. Written permission of the chairperson. Repeatable to a maximum of 45 cr hrs, including cr hrs earned in Communication 697. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, duration) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign

711 Electronic Publishing U G 3
Survey of videotex, teletext, and cabletext; emphasis on news services provided by these publishing activities; impact on other media. 1 3-hr cl. Not open to students with credit for Journal 711.

712 Producing News for Videotext, Teletext, and Cabletext U G 3
Presentation of the techniques of editing, writing, and reporting for electronic publishing.
1 cl, 2 2-hr labs. Prereq: 202 or Journal 202, or 571 or Journal 571, or permission of instructor. Not open to students with credit for Journal 712.

730 Communication Dynamics in the Small Group U G 5
A communicative-based self-analytic study group which utilizes SYMLOG to analyze the communication dynamics within the small group.
3-2 1-hr cl. Prereq: Communic major and 330 or Communic 330, and 351 or Communic 531; or grad standing; or permission of instructor. Not open to students with credit for Communication 730.

780 Communication Research Methods U G 5
Predominant research methodologies in the field of communication.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 20 cr hrs including cr hrs earned in Communic 701 and 780 decimal subdivisions; subdivisions not repeatable.

780.02 Rhetorical Analysis and Criticism

780.03 Telecommunication and Electronic Media Survey Research Methods

780.04 Telecommunication and Electronic Media Policy Research Methods

H783 Honors Research U 3-15
A program of independent study for the student with special aptitudes; individual conferences and reports.
Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the communic or journal or J com courses and an average of 5 in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in Communication H783 and Journal H783. This course is graded S/U.

790 Research Practicum in Communication U G 5
Survey of research methods and "hands on" experience in conducting a research project.
Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 25 cr hrs, including cr hrs earned in Communication 790.

790.01 Critical/Cultural Practicum
790.02 Interpersonal/Organizational Practicum
790.03 Rhetoric Practicum
790.04 Telecommunication and Electronic Media Practicum

794 Group Studies U G 3
Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in Communication 794.

797 Interdepartmental Seminars U P G 3
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced.
Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Communication 797, and by permission.

801 Research Methodologies for Journalism and Mass Communication G 4
Integrated reading and research in the field of journalism.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Journal 801 decimals.

801.01 Survey and other Field Methods
Prereq: 651 or Communic 651 or Journal 651 or permission of instructor.

801.02 Experimental Design
Prereq: 651 or Communic 651 or Journal 651 or permission of instructor.

801.03 Content Analysis
Prereq: 651 or Communic 651 or Journal 651 or permission of instructor.

801.04 Legal Methods
Prereq: 607 and Journal 607 or permission of instructor.

801.05 Historical Methods
Prereq: 606, or Journal 605, or permission of instructor.

802 Topics in Journalism and Mass Communication G 4
Integrated reading and research in the field of journalism.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs, including cr hrs earned in Journal 802 decimals.

802.01 People, Society, and Mass Media
Prereq: 642 or Journal 642 or permission of instructor.

802.02 International Communications
Prereq: 643 or Journal 643 or permission of instructor.

802.03 Theories of Mass Communication
Prereq: 651 or Communic 651 or Journal 651 or permission of instructor.

802.04 Literature and Journalism

802.06 Mass Communication Law G 4
First Amendment principles through study of legal philosophy; judicial process; and case law affecting freedom of expression in the U.S. 1 3-hr cl. Prereq: 607 or Journal 607 or permission of instructor.
230 Journalism and Communication

832.06 Special Topics G 4
Discussion of current research in journalistic areas of mass communication.
1-3 hr. cr. Repeatable to a maximum of 12 cr. hrs, including cr or hrs earned in Journal 802.06.

803 Issues in Journalism G 4
Integrated reading and research in the fields of journalism. Repeatable to a maximum of 12 cr. hrs, including cr or hrs earned in Journal 803 decimals.

803.01 News-Editorial Journalism G 4

803.02 Radio/Television Journalism G 4

803.03 Visual Communications G 4

803.05 Public Relations G 4
Prereq: 431 or Journal 431 or permission of instructor

805 Kiplinger Public Affairs Reporting Seminar G 3-5
Designed to enhance the understanding and public affairs reporting capabilities of persons admitted to the Kiplinger Program.
Au, Wi, Sp Qtr. Prereq: Admission to the Kiplinger Public Affairs Reporting Program. Repeatable to a maximum of 10 cr hrs, including cr or hrs earned in Journal 865.

806 Introduction to Research and Teaching in Communication G 5
Introduction to graduate study and research in communication and the teaching of communication; emphasis on both the resources available for research and the skills and problems in teaching communication.
Au Qtr. 2-2 hr. cr. Prereq: Grad standing in communic and permission of instructor. Not open to students with credit for Communic 860.

807 Professional Development in Academia G 5
Designed to give graduate students in communication the knowledge and skills necessary to be successful in academic careers.
Wi, Qtr. 2-2 hr. cr. Prereq: 860 or Communic 860. Not open to students with credit for Communic 891.

811 Seminars in History and Criticism of Public Address G 5
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs, including cr or hrs earned in Communic 811.
A—Rhetoric of Social Movements
B—American Culture and Public Communication
C—Communication Ethics
D—Implicit Order of Change
E—Political Communication
F—China and the West

816 Seminars in Rhetorical Theory G 5
Prereq: Permission of instructor. Repeatable to a maximum of 40 cr hrs, including cr or hrs earned in Communic 816.
A—Classical Rhetorical Theory. Sp Qtr.
B—Medieval and Renaissance Rhetorical Theory
C—Modern and Contemporary Rhetorical Theory
D—Theory of Argument
E—Major Issues in Rhetorical and Communication Theory
F—Rhetoric and Rationale
G—Rhetoric, Fantasy, and Theories of Play
H—Negotiation of Meaning
I—Chinese Rhetorical Theory and Practice

820 Foundations of Interpersonal and Organizational Communication G 5
Survey of historical and current trends in theory and research methodology, examination of various approaches to communication research with exemplars.
Sp Qtr. 2-2 hr. cr. Prereq: 806 or Communic 800. Not open to students with credit for Communic 820.

830 Advanced Study in Interpersonal/Organizational Communication G 5
Au Qtr. Prereq: 820 or permission of instructor. Repeatable to a maximum of 40 cr hrs including cr or hrs earned in Communic 820; individual topics not repeatable.
A—Survey of Interpersonal Communication
B—Survey of Small Group Communication
C—Survey of Organizational Communication: Micro-Issues
D—Survey of Organizational Communication: Macro-Issues

840 Foundations of Mass Communication G 5
Survey of theory and research in mass communication.
Wi Qtr. 2-2 hr. cr. Prereq: 806 or Communic 800. Not open to students with credit for Communic 840.

850 Advanced Study in Telecommunication and Electronic Media G 5
Wi Qtr. Prereq: 840. Repeatable to a maximum of 40 cr hrs including cr or hrs earned in Communic 850; individual topics not repeatable.
A—Theories of Telecommunication and Electronic Media
B—Telecommunication and Electronic Media Policy
C—New Communication Technologies
D—International Telecommunication and Electronic Media
E—Telecommunication and Electronic Media Organizations and Industries

860 Foundations of Discourse Studies in Communication G 5
A comprehensive introduction to critical/cultural studies of communication and rhetoric.
Sp Qtr. 2-2 hr. cr. Prereq: 806 or Communic 800. Not open to students with credit for Communic 860.

870 Advanced Study in Critical/Cultural Studies in Communication G 5
Selected topics in communication as addressed by critical/cultural studies approaches.
Prereq: 860 or Communic 860 or permission of instructor. Repeatable to a maximum of 40 cr hrs, including cr or hrs earned in Communic 870; individual topics not repeatable.
A—Cultural Studies in Communication
B—Contemporary Marxist Communication Theories
C—Phenomenological Theories of Communication. Au Qtr.
D—Feminist Scholarship in Communication
E—Semiotics and Communication

893 Individual Studies in Communication G 1-5
Graduate students may register for individual study in areas not normally covered by courses, or to supplement credits in existing 800-level courses.
Au, Wi, Qtr. Prereq: 893. Students may register for individual study in areas not normally covered by courses, or to supplement credits in existing 800-level courses. Au, Wi, Qtr. Prereq: 893. Students may register for individual study in areas not normally covered by courses, or to supplement credits in existing 800-level courses.

899+ Interdepartmental Seminar G 3
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.

927+ Theory Construction in Communication G 5
The formal principles of theory and model construction function as criteria for examining the strengths and weaknesses of four classes of interpersonal communication models.
Prereq: Grad standing or permission of instructor. Not open to students with credit for Communic 927.

930 Seminars in Interpersonal/Organizational Communication G 5
Prereq: Appropriate 830 course or permission of instructor. Repeatable to a maximum of 40 cr hrs, including cr or hrs earned in Communic 930; individual topics not repeatable.
A—Family Communication (prereq: 830A)
B—Topics in Interpersonal Communication Competence (prereq: 830A)
C—Social Cognition and Communication (prereq: 830A)
D—Language and Conversation (prereq: 830A)
E—Conflict, Negotiation, and Bargaining (prereq: 830A B, or C)
F—Communication Issues in Organizational Assimilation (prereq: 830C)
G—Communication Structure and Network Analysis (prereq: 830D)
H—Communication and Change in the Organization (prereq: 830C or D)
I—Communication and Organizational Culture (prereq: 830C or D)
J—Organizational Communication and Authority (prereq: 830C or D)
K—Communication Between Adults and Children (prereq: 830A)
L—Communication in Small Groups (prereq: 830B)

950 Seminars in Telecommunication and Electronic Media G 5
Prereq: Corresponding topic in 850 or permission of instructor. Repeatable to a maximum of 40 cr hrs including cr or hrs earned in Communic 850; individual topics are not repeatable.
A—Theories of Telecommunication and Electronic Media
B—Telecommunication and Electronic Media Policy
C—New Communication Technologies
D—International Telecommunication and Electronic Media
E—Telecommunication and Electronic Media Organizations and Industries
970 Seminars in Critical/Cultural Studies in Communication (G 5)
Seminars in selected topics in critical/cultural studies in communication.
Preq: Grad standing. Repeatable to a maximum of 40 cr hrs, including 0 cr hrs earned in Comm 970; individual topics repeatable with permission of instructor.
A— Popular Culture and Communication
B— Cross-Cultural Communication
C— Third World Communication
D— Gender and Communication
E— Communication and Community
F— Health Communication

998 Research: Thesis (G Arr)
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. These courses are graded S/U.
998.01 Research in Journalism
998.02 Communication

999 Research in Communication: Dissertation (G Arr)
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Korean
204 Cunz Hall, 1841 Millikin Road, 292-5816

101 First Year Korean I (U 5)
Standard modern Korean: development of listening, speaking skills; basic grammar; reading and writing of the Korean script (Hangul).
Au Qtr. 5 cr. Prereq: 101 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

102 First Year Korean II (U 5)
Continuation of 101.
Wi Qtr. 5 cr. Prereq: 101 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. FL Admis Cond course. GEC for lang course.

103 First Year Korean III (U 5)
Continuation of 102.
Sp Qtr. 5 cr. Prereq: 102 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

104 Second Year Korean I (U 5)
Continuation of 103.
Su, Au Qtrs. 5 cr. Prereq: 103 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

111 Intensive Korean Quarter (U 5 or 10)
An intensive course combining the content of 103 and 104.
Sp Qtr. 5-2 hr cr. Prereq: 102 or equiv. Not open to students with credit for 104. Equiv to 3rd and 4th courses in foreign language sequence; successful completion of 101, 102, 111 fulfills ASC foreign lang requirement. Students with credit for 103 may not register for more than 5 cr hrs. GEC for lang course.

205 Second Year Korean II (U 5)
Continuation of 104; designed to provide further acquisition of language skills in speaking, aural comprehension, reading, and writing.
Au Qtr. 5 cr. Prereq: 104 or 111 or equiv.

206 Second Year Korean III (U 5)
Continuation of 205; designed to provide further acquisition of language skills in speaking, aural comprehension, reading, and writing.
Wi Qtr. 5 cr. Prereq: 205 or equiv.

231 Elements of Korean Culture (U 5)
A survey of the religion, customs, performing arts, fine arts, literature, and social institutions of the Korean people from the earliest era to the present.
Sp Qtr. 5 cr. Taught in English. GEC arts and hums cultures and ideas course.

251 Korean Literature in Translation (U 5)
A close examination of masterpieces in Korean literature across different genres.
Wi, Sp Qtrs. 5 cr. No knowledge of the Korean language is required; all reading materials are in English. GEC arts and hums lit course.

507 Third Year Korean I (U G 5)
Readings in modern Korean, aiming at expansion of vocabulary, acquisition of Chinese characters; translation, composition, and grammar drill.
Au Qtr. 5 cr. Prereq: 208 or equiv.

508 Third Year Korean II (U G 5)
Continuation of 507.
Wi Qtr. 5 cr. Prereq: 507 or equiv.

509 Third Year Korean III (U G 5)
Continuation of 508.
Sp Qtr. 5 cr. Prereq: 508 or equiv.

514 Advanced Reading, Composition, and Conversation in Korean (U G 5)
Practical application of the third-year level Korean language through the combined practice in reading, composition, and discussion.
5 1-hr cr. Prereq: 2nd yr Korean or equiv.

645 Studies in Korean-American Literature (U G 5)
Critical study of Korean-American literature and literary genres of the twentieth century, with particular attention to historical, social and cultural contexts.
Au Qtr. 2 2-hr cr. Prereq: 10 or hrs in literature or grad standing or permission of instructor. Not open to students with credit for Comp Std 645. Cross-listed in Comparative Studies in the Humanities.

654 Korean Literary Traditions (U G 5)
Analyses of the development of Korean literary traditions and their significance in the cultural and intellectual evolution of Korean society and its people.
Sp Qtr. 2 2-hr cr. Prereq: 231 or 251 or equiv. No knowledge of the Korean language is required. All reading materials in English.

Landscape Architecture
109 Brown Hall, 190 West 17th Avenue, 292-1012

151 Landscape Architectural Design (U 5)
Theory and principles of design and problem solving process as applied to fundamentals of design form in the landscape.
Wi, Sp Qtr. 3 cr, 4 lab hrs.

200 Outlines of Landscape Architecture (U 2)
Introduction to landscape architecture and the environment; roles of the landscape architect in contemporary society.
2 cr. VPA Admis Cond course.

201 Historical Overview of Human Design on the Land (U 5)
Efforts of individuals and societies to control and shape the environment from earliest times to present.
Au Qtr. 5 cr. SS Admis Cond course. BER/GEC/LAR course.

204 Design of Gardens and Small Properties (U 5)
Design of small-scale residential projects; master planning, use of plants and architectural materials, graphics.
2 cr. 4 lab hrs. VPA Admis Cond course.

205 Design of Gardens and Small Properties (U 5)
Continuation of 204.
2 cr. 4 lab hrs. Prereq: 204.

252 Landscape Architectural Design II (U 5)
Introduction to general ecological systems and their relationship to landscape design.
Au Qtr. 3 cr, 6 lab hrs. Prereq: Geol&Mm 12; 21, 2.5 CPHR, and 45 or hrs and successful completion of portfolio review or permission of dept.

253 Landscape Architectural Design III (U 5)
Development of landscape design skills in abstract and real forms; color and spatial organization.
Wi Qtr. 3 cr, 6 lab hrs. Prereq: 252 and 271.

254 Landscape Architectural Design IV (U 5)
Design based upon knowledge of human behavioral psychology.
Sp Qtr. 2 cr, 8 lab hrs. Prereq: 253 and 272.

271 Landscape Architectural Design Communication (U 3)
Introduction to techniques of landscape architectural diagrams, plans, and sections; use of pencil, pen, and marker to express design ideas.
Au Qtr. 3 cr, 3 lab hrs. Prereq: Larch major or permission of the department.
VPA Admis Cond course.
272 Landscape Architectural Design Communication II  U  3
Continuation of 271; introduction of isometrics; use of models as design tools; introduction of color rendering.
Wt. Qtr. 3 cl, 3 lab hrs. Prereq: 271.

321 Landscape Construction: Earthwork as Design  U  5
Study of techniques essential to the horizontal and vertical development of site designs; emphasis on grading as an artform.
Au. Qtr. 3 cl, 6 lab hrs. Prereq: 253 and 271; Math 150. Not open to students with credit for 221.

322 Landscape Construction: Layout Controls  U  3
Study of techniques essential to horizontal and vertical development of site designs; emphasis on layout, and circulation.
Au. Qtr. 2 cl, 2 lab hrs. Prereq: 221, or 321 and Math 150.

323 Landscape Construction: Water in the Landscape  U  5
Integration of site systems; application of landscape construction and landscape materials detailing. Study of surface and subsurface drainage, stormwater management; pools, fountains, and water features in the landscape.
Wt. Qtr. 3 cl, 6 lab hrs. Prereq: 221, or 321.

333 Planting Design  U  5
Issues of planting design applied to the practice of landscape architecture.
Wt. Qtr. 3 cl, 6 lab hrs. Prereq: 254, and 221 or 321, and Hort 234 or H&CS 234. Not open to students with credit for 233.

355 Landscape Architectural Design V  U  5
Theory, principles, and vocabulary of site planning and design reflecting site analysis, social-cultural setting, programmatic requirement, conceptualization, and development-growth issues.
Wt. Qtr. 2 cl, 9 lab hrs. Prereq: 272, 252, 253, 254.

356 Landscape Architectural Design VI  U  5
Macro-scale landscape planning studies involving urbanization and multi-use management of landscape resources.
Sp Qtr. 2 cl, 10 lab hrs. Prereq: 303 and 355.

361 Support Computer Technologies  U  5
Support computer technologies critical in landscape architecture planning, design, analysis, and presentations.
3 cl, 4 lab hrs. Prereq: En Graph 294L, or grad standing. Not open to students with credit for 373.

362 Terrain Analysis  U  5
Methods and techniques of terrain analysis using aerial photographs, exploring characteristics of landform units, and addressing development issues.
Sp Qtr. 2 cl, 1-2 hr lab. Prereq: Geol&Min 121 or permission of instructor. Not open to students with credit for 610. BER/GE/LAR course.

367 The Making and Meaning of the American Landscape  U  5
Interpretation of the contemporary American landscape as the product of many interacting physical and sociocultural forces.
Au, Wi, Sp Qtr. 3 cl, 2-1 hr. rec. Prereq: English 110 or 111 or equiv. Not open to students with credit for 202 or Nat Res 257. Cross-list in Natural Resources. VPA Admis Cond course. GEC second writing course (and arts and hums cultures and ideas BS only).

424 Landscape Construction: Materials  U  3
Properties and production of man-made landscape building materials; material performance in outdoor application; construction detailing with emphasis on wood and masonry assemblies.
Au. Qtr. 3 cl, 3 lab hrs. Prereq: Math 150.

442 Landscape Architectural Design VIII  U  5
Project scale site planning and design; emphasis on development of landscape architectural skills required to complete the master plan and schematic design phases of landscape design.
Au. Qtr. 1 cl, 12 lab hrs. Prereq: 343, Travel and subsistence cost for the field trip will be borne by the student.

457 Urban Landscape Design  U  5
Project scale site planning and design within the urban fabric; special study of artistic and ecological principles to address contemporary environmental, economical, and cultural issues in the urban setting.
Au. Qtr. 3 cl, 3 lab hrs. Prereq: 323 and 355.

597 Stewardship Issues in Environmental Design and Development  U  5
Exploration of the ecological, economic, ethical, political, and social-cultural ramifications of contemporary environmental issues; emphasis on ways the individual or group can respond effectively. 
Sp Qtr. 5 cl. Prereq: Sr standing. GEC/LAR course.

503 History of the Profession of Landscape Architecture  U  5
Critical analysis of the historical formulation, growth, and present status of the profession of landscape architecture, concentrating on personalities, concerns, and works by selected landscape architects.
Sp Qtr. 5 cl. Not open to students with credit for 203 or 742.

620 Landscape Design Implementation I  P  G  5
Study of design implementation procedures including: grading and drainage, earthwork calculations, road alignment, staking and layout, surveying appliances.
Au. Qtr. 3 cl, 6 lab hrs. Prereq: 670.

622 Landscape Design Implementation II  P  G  5
Study of stormwater management in the treatment of landscape, uses of water in ponds, pools, and fountains; irrigation systems.
Wi. Qtr. 3 cl, 6 lab hrs. Prereq: 620.

624 Design Implementation: Construction Materials  U  3
Introduction to landscape architecture construction materials and their use in building structures.
Au. Qtr. 2 cl, 4 lab hrs. Not open to students with credit for 424.

625 Design Implementation: Landscape Structures  U  3
Structural design of site elements typical in landscape architectural design.
Wi. Qtr. 2, 2-2 hr cl. Prereq: Physics 103 and Math 150. Not open to students with credit for 425.

626 Landscape Construction: Layout Controls  G  3
Basic surveying, horizontal, and vertical curve alignment for roads, and staking and layout of design elements.
Au. Qtr. 2 cl, 2 lab hrs. Prereq: 1st yr grad standing or permission of instructor. Not open to students with credit for 322.

633 Planting Design  U  5
Form and function of plant materials in design applications.
Wt. Qtr. 3 cl, 3 lab hrs. Prereq: Hort 234 or H&CS 234. Not open to students with credit for 333.

640 Landscape Architectural Design  P  G  5
Exploration and application of principles of design, components and characteristics of space, landscape architectural design process, and small scale design.
Au. Qtr. 2 cl, 12 lab hrs. Prereq: Grad standing in larch or permission of grad studies committee.

642 Urban Landscape Design  P  G  5
Landscape design in the urban setting; emphasis on design process, spatial structure, and design detailing of urban spaces.
Wt. Qtr. 2 cl, 12 lab hrs. Prereq: 670 or permission of grad studies committee.

644 Site Planning and Design  P  G  5
Investigation of site planning and design at the project scale in the urban fringe or rural setting.
Sp Qtr. 2 cl, 12 lab hrs, arr field trips. Prereq: 542 and 672. Travel and subsistence costs for the field trips will be borne by the student.

658 Landscape Architecture Design and Construction  U  G  5
Synthesis of design development based on theory, principles and skills developed in previous design, construction, history and other related courses.
Wt. Qtr. 3 cl, 3 lab hrs. Prereq: 457 or 421.

662 Terrain Analysis  U  G  5
Methods and techniques of terrain analysis using aerial photographs, exploring characteristics of landform units, and addressing development issues.
Sp Qtr. 2 cl, 1-2 hr lab. Prereq: Geol&Min 121 or permission of instructor. Not open to students with credit for 362, or 816.

663 Landscape Architecture Professional Practice Seminar  U  G  5
Development of writing skills applied to professional issues in landscape architecture.
Sp. Qtr. 2-3 hr cl. Prereq: Second writing course and sr standing, or 444. Not open to students with credit for 451. GEC course.

665 Digital Landscape Architectural Design and Documentation  U  G  5
Introduction to the design procedures appropriate to emerging technology, especially AutoCAD and related software introduction to documentation methods for construction and implementation.
Su Qtr. 3 cl, 2-3 hr labs. Prereq: 361 or equiv.
670 Graphic Techniques in Landscape Architecture  P G 3
Graphic media, elements, and skills required in the preparation of landscape architectural presentations in plan, section, and elevation.
Au Qtr. Prereq: Grad standing in larch or permission of grad studies committee.

672 Landscape Architectural Graphics III  P G 3
Principles and techniques of drawing and rendering of sections, isometrics, and perspectives.
Wi Qtr. 6 lab hrs. Prereq: 670 and grad standing in larch. Not open to students with credit for 272.

693 Individual Studies  U G 2-5
For students in the Graduate School and those who wish to pursue special studies in landscape architecture.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing or permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

694 Group Studies  U G 2-5
For students majoring in landscape architecture desiring to pursue special studies not offered in the fixed curriculum.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of the dept. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution  U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

740* Research and Documentation in Landscape Architecture  P G 3
Research in professional practice techniques; emphasizes all phases of design investigation and documentation.
Au Qtr. 1 cl, 4-5 hr labs. Prereq: Grad standing in larch. Repeatable to a maximum of 15 cr hrs.

750 Graduate Landscape Architectural Design: Advanced Site Planning  U P G 5
Advanced professional landscape architectural project design techniques; documentation and execution of all phases from programming through detailed design and construction documents.
Au, Wi, Sp Qtrs. 3 cl, 3 lab hrs. Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 cr hrs.

752 Graduate Landscape Architectural Design: Land Planning  U P G 5
The relationship between humans and the macro-environment; emphasizes contemporary land use issues, relationship between limited natural resources and human use, use of GIS technology to analyze landscapes and formulate plans and policies.
3 cl, 3 3-hr labs. Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 cr hrs.

754 Graduate Landscape Architectural Design: Urban Design  U P G 5
Role of landscape in urban settings; study of project types such as rehabilitation or derelict land, neighborhood revitalization, creation of public places.
3 cl, 3 3-hr labs. Prereq: Completion of 640 series or permission of instructor. Repeatable to a maximum of 15 cr hrs.

760 Evaluation and Criticism in Landscape Architecture  P G 2
Seminar in design philosophy and aesthetic evaluation criteria in landscape architecture.
Au, Wi, Sp Qtrs. 1-2 hr seminar. Prereq: Grad standing in larch. Repeatable to a maximum of 8 cr hrs.

970 Project in Landscape Architecture  G Arr
Project scale design research, programming, and preparation of design alternatives, schematic, design development and construction documents for a selected project.
Au, Wi, Sp Qtrs. 2-15 hrs arr. Prereq: Grad standing in larch. Grade P will be assigned until completion of the project, at which time a letter grade will be given. Repeatable to a maximum of 15 cr hrs.

998 Thesis in Landscape Architecture  G 1-15
Preparation of master's thesis.
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of Graduate Studies Committee Chair. Grade P will be assigned until completion of the project, at which time a grade of S/U will be given. Repeatable to a maximum of 89 cr hrs.

Latin

414 University Hall, 230 North Oval Mall, 292-2744
See also Classics.
Classics majors specializing in Latin should consult the departmental statement in the College of Humanities section of the Colleges of the Arts and Sciences Bulletin. Placement tests are required for all matriculating (including transfer) students who continue the study of Latin in the University in courses 101, 102, 103, 104, and any 200-level course. A placement test will be given on the first day of the quarter. For details see the departmental secretary in 414 University Hall.

Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level.

101 Elementary Latin I  U 5
Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for 100.01, 100.02, or 101.01; or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

102 Elementary Latin II  U 5
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 100.02 or 101.01, or 5 cr hrs of 101.02 or 101.51. Not open to students with credit for 102.01 or 5 cr hrs of 102.51. This course is available for EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Latin I  U 5
Completion of Latin grammar and syntax; introduction to reading of Latin authors.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 102, 102.01, or 5 cr hrs of 102.02 or 102.51. Not open to students with credit for 103.01 or 5 cr hrs of 103.51. This course is available for EM credit. GEC for lang course.

104 Intermediate Latin II  U 5
Selected readings in Latin literature.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Placement test, or 103.01, or 5 cr hrs of 103.02 or 103.51. This course is available for EM credit. GEC for lang course.

206 Roman Comedy  U 5
Readings from the comedies of Plautus and Terence.
5 cl. Prereq: 104 or equiv high school Latin.

210* Cicero U 5
Readings from the Orations.
Au Qtr. 5 cl. Prereq: 104 or equiv high school Latin.

211 Vergil U 5
Readings from the Aeneid.
Sp Qtr. 5 cl. Prereq: 104 or equiv high school Latin.

212* Roman Historians U 5
Readings from Caesar, Sallust, Livy, and/or Tacitus' Agricola.
Wi Qtr. 5 cl. Prereq: 104 or equiv high school Latin.

213* Ovid U 5
Readings from the Metamorphoses.
5 cl. Prereq: 104 or equiv high school Latin.

293 Individual Studies  U 1-6
Intermediate readings in Latin literature.
Su, Au, Wi, Sp Qtrs. Prereq: 101-104 or equiv; and written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

571 Fundamentals of Latin for Graduate Students I  G 5
Fundamentals of Latin grammar and syntax for grad students preparing to use Latin in work in non-classical fields.
5 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 501. Credit does not apply toward minimum hrs required for master's or doctoral degree. No audit.

572 Fundamentals of Latin for Graduate Students II  G 5
A continuation of 571; preparation for reading Latin texts.
5 cl. Prereq: Grad standing or permission of instructor. Not open to students with credit for 502. Credit does not apply toward minimum hrs required for the master's or doctoral degree. No audit.

612* Latin Prose Composition  U G 5
Review of elementary syntax(11,6),(990,994) leading to composition of sentences and short connected passages; concurrent readings from Caesar or Cicero.
Au Qtr. 3 cl, 2 hrs arr. Prereq: 4 courses more advanced than 104 or permission of instructor.
614* Readings in Roman Lyric and Erotic Poetry U G 5
Readings from Catullus, Horace, Propertius, and others.
2 2-hr cl. Prereq: 4 courses more advanced than 104. Not open to students with credit for 214. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

615* Readings in Roman Oratory and Rhetorical Theory U G 5
Readings in Roman orators and rhetoricians, including Cicero, Quintilian, and Tacitus.
2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

616 Readings in Latin Epic U G 5
Readings in Latin epic, including such texts as Vergil’s Aeneid, Ovid’s Metamorphoses, and Lucan’s Bellum Civile.
2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

617 Readings in Roman Historians U G 5
Readings in Roman historians, including Caesar, Livy, and Tacitus.
2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

618 Readings in Roman Philosophy U G 5
Readings from Roman philosophers, including Cicero, Lucretius, and Seneca.
2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

621 Readings in Roman Comedy U G 5
Extensive readings drawn from the works of Plautus and Terence.
2 2-hr cl. Prereq: 4 courses more advanced than 104.

623 Readings in Roman Satire and Novel U G 5
Readings in Roman satire and novel, including texts by Horace, Juvenal, Apuleius, and Petronius.
2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 10 cr hrs, with permission of instructor.

625 Readings in Post Classical Latin U G 5
Extensive readings from texts illustrating the history of Latin language and literature of the medieval and/or Renaissance periods.
2 2-hr cl. Prereq: 4 courses more advanced than 104 or permission of instructor. Repeatable to a maximum of 10 cr hrs.

660 Special Topics in Latin Literature U G 5
Extensive reading from masterpieces of Latin literature; topic varies.
2 2-hr cl. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 20 cr hrs.

683 Individual Studies U G 1-6
Passages for reading and topics for investigation will be selected to meet the needs of individual students.
Su, Au, Wi, Sp Qtrs. Prereq: 4 courses more advanced than 104. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Ann. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

701* Survey of Latin Literature: The Republic U G 5
A survey of authors representative of the Republican period of Latin literature, with discussion of historical background and methods of criticism.
2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 601.

702* Survey of Latin Literature: Augustan Age U G 5
A survey of authors representative of the Augustan period of Latin literature, with discussion of historical background and methods of criticism.
2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 602.

703* Survey of Latin Literature: Imperial Period U G 5
A survey of authors representative of the Imperial period of Latin literature, with discussion of historical background and methods of criticism.
2 2-hr cl. Prereq: 4 200-level courses and permission of instructor; or grad standing. Not open to students with credit for 603.

H783 Honors Research U 3-5
A program of study arranged for each student with individual conferences, reports, and an honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 44 hr standing with a grade of A in at least half of the Latin courses taken and with an average of B in the remainder; written permission of instructor under whose supervision the work is to be completed and ASC Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in Latin. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

General Prerequisites for Courses Numbered 800 and Above
Prerequisites for admission to courses numbered 800 and above are graduate standing and permission of the chairperson.

802 Advanced Latin Prose Composition G 5
Study of the development and style of Latin prose; prose composition exercises; prepared and unprepared readings; conventions of prosody.
2 cl, tutorial arr. Prereq: 612 or permission of instructor.

812* Studies in Vergil G 5
Critical study of one or more of the works of Vergil.
2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

834 Studies in Cicero G 5
Selected topics in the works of Cicero.
Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

830 Studies in Roman Drama G 5
Critical study of one or more of the Roman dramatists: Plautus, Terence, Seneca.
2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

831 Studies in the Roman Historians G 5
Selected topics in Roman historiography: Caesar, Sallust, Livy, Tacitus.
Wi Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

832* Studies in Latin Lyric and Elegy G 5
Selected topics: poems of Catullus, the Odes and Epodes of Horace, or the elegies of Propertius, Tibullus, or Ovid.
Sp Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

833* Studies in Roman Satire and Novel G 5
Critical study of one or more of the Roman satirists and novelists: Lucilius, Horace, Petrus, Petronius, Juvenal, Apuleius.
Au Qtr. 2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

835 Studies in Roman Epic G 5
Selected topics in the history of Roman epic exclusive of Vergil: Ennius, Lucretius, Ovid, Lucan.
2 2-hr cl. Repeatable to a maximum of 15 cr hrs.

894 Group Studies G 1-6
Repeatable to a maximum of 20 cr hrs.

993 Individual Studies G 1-5
Assigned readings; supervised individual research.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

995 Seminar I G 5
The seminar completes a two-yr sequence (Au/Wi. Wi/Rp) begun with an 800-level intensive study of an author or genre; e.g. Cicero, Horace, Apuleius, or comedy.
Sp Qtr. Repeatable to a maximum of 20 cr hrs.

999 Research G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Law
220 Law-Drinks Building, 55 West 12th Avenue, 292-2631
The College of Law is on a semester calendar. For 1996-97, the Fall Semester will begin August 21, 1996 and end December 21, 1996. The Spring Semester will begin January 10, 1997, and end May 10, 1997. The credits contained on the listing below are semester credit hours. The equivalent number of quarter credit hours can be determined by multiplying the semester hours by one and one-half.

502 Legal Writing and Analysis P 2
Introduction to legal analysis and writing.
2nd Sem. 2 cl hrs. Offered 2nd Sem only; for 2 cr hrs-letter graded.
624 Real Estate Transfers P G 3
Examination of legal doctrine and institutions that govern the commercial and residential real estate industry. 1st, 2nd Sem. 3-3 hr cl. Prereq: Completion of first-year law.

625 Copyright Law P G 2-3
Protection of literary and artistic property under the federal copyright statute, related legislation and unfair competition law.

627 American Legal History P G 2-3
The history of American law from its colonial antecedents until the twentieth century, emphasizing the relationship between law and the changing social, political, and economic conditions.

628 Legal Problems of Financial Information P G 2-3
Problems of financial information in the context of business enterprise law and tax law.

629 Legislation P G 2-3
Roles of the lawyer in the legislative process; legislative organization, jurisdiction, and procedure; formation of legislative policy; legislative drafting; statutory interpretation.

633 Criminal Law P 3-4
Substantive criminal law; functions and goals; legislative and judicial roles; constitutional limitations; fundamental concepts of culpability; defenses; definitions and functions of selected offenses.

634 Juvenile Justice P 2-4
The law applicable to children, including a study of agency and juvenile court treatment of dependent, neglected, abused, unruly, and delinquent children. Repeatable to a maximum of 7 cr hrs.

635 Family Law P G 3-4
Legal concerns in marital relationships, including entrance into marriage, spousal relationships during marriage, annulment, divorce, custody, and post-divorce financial arrangements; legal concerns in quasi-marital living arrangements; communal living and homosexual relationships.

636 Law and the Mentally Disabled P G 2-3
Problem-oriented analysis of interaction between law and social science; emphasis on civil commitment, rights of institutionalized individuals, rights to community services (educational, residential, employment), and guardianship.

637 Comparative Legal History P G 2-3
Comparative studies in history of law and exploration of relationship between the development of legal systems and societal structures.

639 Federal Criminal Law P G 2-3
Advanced substantive and procedural study of the federal criminal law enforcement system including RICO (Racketeer Influenced and Corrupt Organizations), mail fraud, drug offenses, tax enforcement, bank secrecy, and civil rights. 3 cr. Prereq: 633.

640 Criminal Procedure: Police Evidence Gathering Practices P 3
Legality of police practices to gather evidence; emphasis on interrogation and search and seizure; some reference to identification procedures and entrapment.

641 Criminal Procedure: The Pretrial Process P 3
Study of the criminal justice system emphasizing the right to counsel, bail, preliminary proceedings, grand jury, speedy trial, discovery, and pleas.

644 Agency and Employment P 2-3
A system-descriptive approach to the common incidents of employment, partnership, and other agencies.

646 Protection of Personality Interest P G 2-3
Legal rights and remedies developed to protect interests in reputation, privacy, and other aspects of human dignity.

647 Sex-Based Discrimination and the Law P G 2-3
Law, legal institutions, and policy issues relevant to the repress of sex-based discrimination; constitutional, legislative, executive, and judicial avenues of redress.

648 Land Use Planning Law P G 2-3
Zoning, subdivision controls, and an introduction to municipal planning; topics vary, may include eminent domain, state and regional planning, government development, and private land use controls.

649 Advanced Land Use Planning Law P G 2-3
Study of public regulatory devices for land use and development; eminent domain; planned unit development; urban renewal; official maps; new towns; open space. Prereq: 648.

650 Local Government Law P G 2
Types and organizations of local government units; intergovernmental relations; "home rule" power of Ohio municipalities; personnel; lawmaking; community planning; taxing and finance; contracts; legal liability.

652 Banking Law P G 2-3
Study of development of banking activities, structure, and regulation; emphasis on state and federal banking laws; interinstitutional competition, and laws relating to geographic and product expansion.

656 Gratuitous Transfers P G 2-4
Gifts, wills, intestate succession, protection of spouse and other dependents, fiduciary administration, social security and other employee benefits, life insurance. 2-4 cr hrs.

657 Consumer Law P G 2-3
In-depth study of consumer rights and remedies as provided by the common law and federal and state statutes, with particular emphasis on the Federal Truth In Lending Act.

658 Advanced Constitutional Law P G 2-3
Constitutional theory, with emphasis on competing views of judicial review and the judicial function; the methodologies and processes of constitutional decision making; and criteria for judicial justification.

659 Commercial Law P 3-6
Combination of sales, commercial paper, and secured transactions courses; focuses on the entire Commercial Code and explores related federal statutes. 3 or 6 cr. Prereq: Completion of first yr law program. Not open to students with credit for 605, 609, or 610. Repeatable to a maximum of 6 cr hrs. Two sem sequence. Progress graded first sem; final grade awarded upon completion of 6 cr hrs.

694 Group Studies P 1-4
Group study in selected areas of the law. Repeatable to a maximum of 13 cr hrs.

696 Anglo-American Legal System U 1-6
Introduction to the Anglo-American Legal System for undergraduate students, taught summers at the University of Oxford, Oxford, England. Su Qtr. Limited to students accepted in Oxford Summer Program.

697 Study at a Foreign Institution P 1-10
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. 1st, 2nd Sem, Su Session. Arr. Prereq: Written permission of the Dean. Repeatable to a maximum of 30 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Interprofessional Education
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation; limited to students in education, law, medicine, nursing, social work, bio-medical sciences, and allied health professions. Repeatable to a maximum of 4 cr hrs.

700.01 Care of Patient/Client P G 1-2
Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.

700.03 Ethical Issues P G 1-2
Ethical issues of concern to the professions and arising out of advanced technology; euthanasia, mind control, malpractice, and social responsibility of the professions.

700.04 Interprofessional Practicum in Clinical Settings P G 1-3
Interprofessional teamwork in clinical settings. 2nd Sem.

703 Legal Negotiation and Settlement P 2-4
Study of the theory, law, and practice of transactional and settlement negotiations through actual negotiations by individual students in a variety of legal negotiation settings. 2-2 hr cl. Prereq: 736.01 or professional responsibility recommended. Enrollment limited to 18 students, class attendance mandatory.

704 Trial Practice P 2-4
Forensic skills developed through actual trial advocacy by individual students in civil or criminal cases. Prereq: 603 or written permission of instructor.

705 Complex Litigation P 2-4
705 Conflict of Laws P G 2-3
Private law pertaining to juridical relations containing one or more foreign elements; jurisdiction; foreign judgments; domicile; choice of law; torts; workmen's compensation acts; contracts; property; family law; decedents' estates.

707 Administration of Decedents' Estates P 2
Probate and contests of wills; jurisdiction; effect and necessity of administration; inventory and assets; contracts; sales and investments by personal representatives; claims; accounting and distribution.

708 Regulation of Security Distributions P G 2-3
Analysis of Securities Act of 1933 and its pervasive effects on the issuance and transfers of securities.

709 Advanced Securities P G 2-4
Advanced topics in federal and state securities law. Prereq: 607, and prereq or concur: 708.

710 Federal Courts P G 3-4
The federal judicial system: jurisdiction of the district courts, courts of appeals, and United States Supreme Court. 3-4 cr hrs.

711 Law and Medicine P G 2-4
Selected issues in the practice of medicine; medical malpractice, ethical issues, regulation of the health care industry, and use of medical testimony and proof in litigation.

713 Appellate Practice IV P 1-4
Procedural and substantive aspects of appellate practice; perfection of appeals; preparation of briefs and oral argument; participation by third-year students in various aspects of Moot Court Program. 1 to 4 cr hrs by arrangement with instructor. Repeatable to a maximum of 8 cr hrs with permission of the instructor. S or U grade given on completion of third-year Moot Court Program.

715 Corporate Taxation P G 3-4
Taxation of organizations; operations; sales and liquidations; divisions and reorganizations. Prereq: 606.

716 International Aspects of U.S. Income Taxation P 2-3
United States taxation of transnational transactions, including taxation of foreign entities operating in the United States and taxation of United States entities operating in foreign countries. Prereq: 606.

718 Unfair Trade Practice P G 2-3
Competition, consumer, and administrative remedies for unfair business practices, including trademark infringement, trade secret appropriation, false advertising and disparagement, and copyright infringement.

719 Natural Resources P 3
The nature and incidents of public and private interests in water, minerals, oil and gas; conveyancing of natural resources, and mineral, oil, and gas leasing.

720 Roman Law P 3
Studies in the origins and development of Roman law based on original sources of translation. Cross-listed in Classics as 607. This course is graded S/U.

725 Deferred Compensation P 2-4
Federal tax consequences of nonqualified deferred compensation plans and qualified pension, profit sharing, and stock bonus plans.

727 Regulated Industries P 2-4
Legal and economic principles of rate regulation and entry requirements in utility, broadcasting, and transportation industries.

728 International Transactions P G 2-4
Legal problems in transnational context arising from doing business abroad; investments; establishment; exchange controls; trade, licensing; extraterritoriality of regulatory legislation; international agreements; European Common Market.

729 Administrative Law P G 3-4
A study of the creation, operation, and control of federal administrative agencies, emphasizing their legislative, investigative, and adjudicatory authority and its control through judicial review.

731 Business Planning P G 2-4
Advanced topics concerning business enterprises. Prereq: 606 and 607.

732 Environmental Law P G 2-4
Federal environmental legislation, regulations, and judicial interpretation, including Natural Environmental Policy Act, the Clean Air Act, the Clean Water Act, and the Solid Waste Act, as amended.

733 Political and Civil Rights: The First Amendment P G 2-3
Advanced study of First Amendment precedent and doctrines governing the press, speech, association, and church-state relations.

734 Political and Civil Rights: Equal Protection of the Law P G 2
Advanced study of civil rights and legal problems of race relations in the contemporary social milieu: segregation, discrimination, equal protection, separation, and affirmative action.

735 Law Journal P 1-2
Special studies covering diverse subjects of a legal nature participated in by the group selected for work on the Law Journal. Prereq: Selection for Law Journal by editors. Repeatable to a maximum of 4 cr hrs. Students may earn up to 2 cr hrs for Law Journal participation prior to the beginning of the fifth semester, and may earn an additional 2 cr hrs for participation in the two final semesters of academic residence.

736 Professional Responsibility
Legal and ethical problems of the legal profession and the practicing lawyer. Required course.

736.01 Legal Profession P 1-2
Unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline. 1st and 2nd Sem, Su Session. 1-2 cr. Prereq: First year law course.

736.02 Legal Profession P 1-4
A more comprehensive presentation of unauthorized practice, bar admission, group legal services, malpractice, professional organization, and discipline. 1st and 2nd Sem, Su Session. 4 cr. Prereq: First year law course. Not open to students with cr for 736.01.

737 Patent Law P G 2-3
Fundamentals of substantive patent law relating to standards of patentability, patent claim interpretation and enforcement in patent litigation, and licensing.

738 Study and Practicum in Legal Problems
Pursuant to the New York Court of Appeals Rules for Admission to Practice, students who enroll for more than 8 or hrs may be ineligible for admission to practice in New York. No student may enroll in more than 16 cr hrs.

739 Study and Practicum in Legal Problems
Advanced study and training in performance of legal services for the poor under supervision of clinical faculty and staff attorney.

739.01 Criminal Defense Practicum P 4
Development of the basic knowledge and skills of criminal law practice. Prereq or concur: 603 plus one or more of the following: 633, 840, 841; or written permission of instructor.

739.02 Civil Law Practicum P 4
Development of the basic knowledge and skills of civil law practice on behalf of the poor. May not be taken simultaneously with any other practicum.

739.04 Juvenile Law Practicum P 4
Study of the intricacies of the juvenile intake process; difficulties of dealing with a total family situation involving child neglect or juvenile delinquency, and substantive legal problems of the juvenile area. Prereq: None; 643, 644 and/or 641 recommended.

739.07 Civil Liberties Practicum P 4
Supervised clinical course involving study of problems peculiar to civil liberties law practice, including handling of selected cases involving civil liberties. Prereq: None; 733 and 724 recommended.

739.20 Selected Legal Problems Practicum P 1-6
Topics will change as specially scheduled in any semester. Repeatable to a maximum of 8 cr hrs.

739 Pretrial Litigation P 3
Depositions and client interviews; drafting of interrogatories; case strategies. 1st, 2nd sem. 3-3 hr cr. Prereq: Completion of first-year law.

740 Taxation of Gifts, Trusts, and Estates P 2-3
Tax treatment of gratuitous transfers, including gift, estate, and generation-skipping taxation, and income taxation of trusts, estates, and beneficiaries.

742 Trusts and Future Interests P G 3-4
Classification of interests, construction of limitations, destructibility rule, Doctrine of Worthier Title, Rule in Shelley's Case, Rule against Perpetuities, trusts, powers, and duties of trustees. Prereq: 666.
743 Remedies P G 2-4
An integrated study of remedial theory and devices available in the context of torts, contracts, and property law.

744 Employment Discrimination Law P 2-4
A constitutional and statutory study of federal and state laws that prohibit employment discrimination based upon race, color, religion, sex, national origin, age, and physical and mental handicap.

745 Federal Taxation of Partnerships and Partners P G 2-4
Federal income taxation of partners in general and limited partnerships. 2-4 cl. Prereq: 606.

746 Injunctions P 2
Requirements for equitable jurisdiction, the collateral bar rule, interlocutory relief, procedures for granting, modifying, and appealing injunctions, and contempt.

747 Statutory Civil Rights P 2-3
Study of major federal civil rights statutes covering topics such as discrimination in housing, public accommodations, voting discrimination in private contracts, by government units and officials, and by programs that receive federal financial aid. 2 or 3 cl. Prereq: Completion of first year program.

750 Foreign Relations Law P 3
Constitutional, statutory, and international law basis for conduct of foreign affairs by the U.S. 1st, 2nd Sem. 3 1-hr cl. Prereq: Completion of first-year law.

751 Religion and the Constitution P 3
Treatment of religion by federal and state constitutions. 1st, 2nd Sem. 3 1-hr cl. Prereq: Completion of first-year law.

752 Law of Politics P 3
Examines the laws that govern political elections, including campaign finance rules, ballot access issues, and re-apportionment. 3 cl. Prereq: 510.

780 Law and Economics P 2-3
Economic analysis of legal opinions, including a review of how courts use economic analysis. 3 cl. Prereq: Completion of first year law curriculum.

781 Comparative Law P 2-3
Broad study of legal systems with emphasis on patterns of similarities and differences. 3 cl. Prereq: Completion of first year law curriculum.

782 Products Liability P 3
Examines the theories and defenses of those involved in the manufacturing and selling of products. 3 cl. Prereq: Completion of first-year law curriculum.

793 Individual Studies P G 1-4
By special arrangement with the dean's office, special problems or projects may be taken for credit under the supervision of members of the faculty. The credit granted varies in proportion to the magnitude of the project. In general, assignment of special problems will be limited to instances of exceptional student specialization, scheduling difficulties, and curricular irregularity. Repeatable to a maximum of 13 cr hrs. S or U grade on completion of assigned work.

794 Group Studies P G 1-6
Group study in selected areas of the law. Repeatable to a maximum of 13 cr hrs.

796 Seminars P G 2-3
Small group study and training in legal and non-legal research, expository writing, and various functions of the practicing lawyer.

796.03 Constitutional Problems
Advanced constitutional questions, including evolution of judicial review, intergovernmental relationships, protection of civil liberties, special problems under Ohio Constitution.

796.07 Legal Regulation of Devotion of Property
Socio-legal problems raised by devolution of wealth through such arrangements as public welfare programs, union welfare funds, insurance, foundations, charitable trusts, and pension trusts.

796.08 Problems in the Law of Evidence
Advanced evidentiary questions involved in preparation for and trial of cases.

796.13 Medical-Legal Problems
Conflict in concept between disciplines of law and medicine in matters of causation, injury, disability, diagnosis, aggravation, and re-injury related to their use in proof of such elements in litigation.

796.16 Right of Privacy
Individual's interest in freedom from publicity and in physical seclusion; particularly legal response to social and technological changes which threaten these interests.

796.191 Selected Problems in Criminal Law
Procedure P 2
Topics vary and will be announced each semester.

796.20 Research Seminar in Law
Topics will change as specially scheduled in any quarter. Repeatable to a maximum of 6 or hrs. Law 796M20, Women and the Law, grad level, 2 semester or hrs, cross-listed in Women's Studies.

796.39 Business Planning
Planning and drafting in field of business association; principally concerned with problems in general and limited partnerships, business trusts, and closely-held corporations.

796.44 Legislative Planning
Role of lawyer in advocating or opposing state and federal legislation; problems selected from past and current proposals before legislature. Prereq: 639. Repeatable to a maximum of 6 or hrs.

796.47 Securities Regulation
Study of recent legal developments affecting security trading market, brokers, exchanges and NASD, investment companies, and other institutional investors. Prereq: 700. Must enroll to a maximum of 4 cr hrs.

796.48 Trade Regulation
Study of current problems of trade regulations, e.g. antitrust, unfair trade practices, patents, food and drug law. Prereq: By designation of instructor.

796.511 Social and Environmental Litigation
Study of impact of law on social and environmental problems with emphasis on procedure and choice of remedies. Prereq: None; 710 and 719 recommended.

796.52 Federal Criminal Law
The relationship of federal and state criminal law; historical role and specialized problems of federal criminal law.

796.551 Consumer Credit
Consumer credit; statutory and judicial regulation, with particular emphasis on the problems of the poor consumer. Prereq: 605, 609, or 610.

796.58 Law and the Political Process
Exploration of the lawyer's role in the political process; the relationship of political parties to the election process; and the interplay of legal requirements and the campaign and voting procedures.

796.61 Society, Deviance, and the Law
How certain members of society are labeled as deviant and how society reacts to that label with legal sanctions and social management techniques. Prereq: Permission of instructor.

796.62 Commercial Law
In-depth consideration of commercial law, focusing primarily on the Uniform Commercial Code. Prereq: 605, 609, and 610.

796.63 Problems in Torts
Exploration of current and emerging problems in the law of torts.

797 Interdepartmental Seminars P 1-5

Linguistics

222 Osley Hall, 1712 Neil Avenue, 292-4052
See also English, the foreign languages, Romance Linguistics, and Sanskrit.

201 Introduction to Language in the Humanities U 5
Examination of language as a system of human communication; provides students with the tools needed for the recording, investigation, and close analysis of language. 5 cl. H201 (honors) may be available (Au, Wi Only) to students enrolled in an honors program or by permission of dept. Not open to students with credit for 202. GEC arts and hums cultures and ideas course.

202 Introduction to Language in the Social Sciences U 5
Examination of language as a system of human communication; provides students with a general understanding of human linguistic behavior and cognition. Not open to students with credit for 201. GEC soc sci individuals and groups course.

2031 Language Differences and Language Universals U 5
Differences in sound systems, word structure, and grammar; illustrations from foreign accents; language types; universals principles of structure. Prereq: 201 and English 110 or 111 or equiv.
294 Group Studies U 5
Introductory topics in linguistics. Repeatable to a maximum of 10 cr. hrs.

330 Language and Gender U 5
How culturally enshrined ideas about gender affect language and the use of language and how linguistic conventions for the expression of gender differences reinforce these ideas. Prereq: English 110 or 111 or equiv. Not open to students with credit for 230. GEC social diversity course.

361 Language and Social Identity in the U.S. U 5
Relationships between language and social diversity in the general American speech community; discussion of how individuals and social groups distinguish themselves on the basis of language. Prereq: 201 or permission of instructor. Not open to students with credit for 261. GEC soc sci individuals and groups, and social diversity course.

365 Language across Cultures U 5
Investigation of relationships between language and culture in different societies with a view to shedding light on cross-cultural similarities and differences. Prereq: English 110 or 111 or equiv. Not open to students with credit for 265. GEC soc sci individuals and groups course.

371 Language and the Mind U 5
Introduction to the psychological processes for producing and understanding speech, the means by which they arise in the child, and bases in the brain. Su, Au, Wi Qtr. Hs871 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 201 or 202, or Psych 100. Not open to students with credit for 271 or Psych 371. Cross-listed in Psychology. GEC soc sci individuals and groups course.

3851 Language Change and Development U 5
Survey of the kinds of linguistic change; discussion of the external influences (social, cultural, political, etc.) that affect the historical development of languages. Prereq: 201 or 202. Not open to students with credit for 285.

500 Phonetics U G 5
Cross-linguistic survey of the sounds of the world’s languages. Prereq: 201 or 202 or equiv. Not open to students with credit for 600B 01.

502 Syntax U G 5
Basic elements of syntactic description and an overview of syntactic structure across languages. Prereq: 201 or 202 or equiv. Not open to students with credit for 602B 01.

503 Phonology U G 5
Introduction to phonological analysis and description, and an overview of phonological structure across languages. Prereq: 201 or 202 or equiv. Not open to students with credit for 603B 01.

509 Morphology U G 5
The grammatical and phonological analysis of words, and their significance in linguistic structure. Au Qtr. 4 cr, 1 lab. Prereq: 201 or 202 or equiv.

600 Phonetics U G 5
600.01 Phonetic Theory
Principles of articulatory phonetics, with some discussion of acoustic phonetics; practice in the production, recognition, and transcription of sounds in various languages of the world. Prereq or concour: 601 or an equiv course in linguistics or phonetics. Not open to students with credit for 600.

600.02 Laboratory Phonology
Introduction to laboratory methods and quantitative models of speech for linguistics. Prereq: 600.01.

601 Introduction to Linguistics U G 5
A broad introduction to general linguistics: survey of phonological, morphological, syntactic, and semantic analysis, and of historical and comparative linguistics.

602 Syntactic Theory U G 5
Theories of syntax; principles of syntactic description. 602.01 Syntactic Theory I Prereq: 601.

602.02 Syntactic Theory II Prereq: 602.01 and 680.

603 Phonological Theory U G 5
Introduction to phonological analysis and the principles governing the structure, acquisition, and change of phonological systems; survey of major phonological theories.

603.01 Phonological Theory I Prereq: 601.

603.02 Phonological Theory II Prereq: 603.01.

603.03 Phonological Theory III Prereq: 603.02.

605 An Introduction to African-American English U 5
Introduction to the structure and history of the varieties of English used by African-Americans and the relationship between language use and sociocultural context. Sp Qtr. 2-2-hr cl. Prereq: Permission of instructor; 201 or equiv recommended. Not open to students with credit for ARP Am&AS 605. Cross-listed in African-American and African Studies.

609 Morphological Theory U G 5
Introduction to and comparison of current theories of morphology, with application to linguistic data and problems. Prereq: 601 or permission of instructor.

611 Introduction to Historical Linguistics U G 5
Introduction to the methods and principles of historical linguistics. Prereq: 601 and 603.01, or background in phonology with permission of instructor.

612 Introduction to Cognitive Science U G 3
Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation. Prereq: Permission of instructor or a total of 12 cr or hours from at least two of the following areas: Cptr/Inf, linguist, philos, and psych. Not open to students with credit for 201 or 202, or Psych 371 or 794 (Sp Qtr 1989) or 794A (Wi Qtr 1990). Cross-listed in Computer and Information Science, Philosophy, and Psychology.

615 Psycholinguistics U G 5
An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing. Prereq: 601 or permission of instructor. Not open to students with credit for Psych 615 or Lrg 671. Cross-listed in Psychology.

623 Topics in Indic Linguistics U G 3, 5
Possible topics include advanced classical Sanskrit, introductory Vedic Sanskrit, Indo-Iranian and Indo-Aryan linguistics, or studies in the ancient Indian grammarians. Prereq: 622 or Sanskrit 622 or permission of instructor. Repeatable to a maximum of 15 cr hrs.

650 Field Methods in Linguistics U G 5
650.01 Field Methods I
Methodology for determining the phonological system of a previously unknown language through the use of a native informant. Prereq: 600 or permission of instructor. Repeatable to a maximum of 40 cr hrs.

650.02 Field Methods II
Methodology for determining the morphological and syntactic system of a previously unknown language through the use of a native informant. Prereq: 650.01. Repeatable to a maximum of 40 cr hrs.

661 Sociolinguistics U G 5
Description and explanation of the interaction between linguistic and social factors in language. Prereq: 601 or permission of instructor.

661.01 Introduction to Sociolinguistics
Survey of approaches to the study of language in its social context; sociology of language, ethnography of speaking, discourse analysis, quantitative sociolinguistics.

661.02 Introduction to Quantitative Sociolinguistics
Exploration of language in its social context through the methods of quantitative analysis of linguistic variation, including the Labovian and implicational models. Prereq: 661.01.

672 Language Description U G 3-5
Informant techniques and (if available) textbooks and published linguistic analyses are employed in analyzing and describing a language. Prereq: 601. Repeatable to a maximum of 30 cr hrs.

680 Formal Foundations of Linguistics U G 5
Applying tools from set theory, symbolic logic, model theory, algebra and formal grammar in the foundations of formal linguistics theories and in linguistic analysis. Au Qtr. 4 cr, 1 lab. Prereq: 601 or equiv.
681 Algebraic Linguistics U G 5
Formal properties of grammar and automata; relations between linear, context-free and context-sensitive grammars and finite, pushdown-storage and linear-bounded automata; properties of transformational grammars.
Prereq: 601 and permission of instructor.

683 Linguistic Semantics U G 5
683.01 Semantics I
Problems and methods in linguistic semantics, using logic and semantic model theory as analytic tools; reference, compositionality, presupposition, conversational implicature, speech acts, deixis.
Prereq: 680 or equiv.

683.02 Semantics II
Montague semantics and more recent semantic theories; influential analysis of important problems, such as generalized quantifiers, lattice-based accounts of plurals and events, discourse representation theory.
Prereq: 683.01 or equiv.

684 Computational Models of Grammar U G 5
Introduction to computational methods used to construct models of grammatical knowledge and sentence processing.
2-2 hr. cl.

684.01 Computational Models of Grammar I
Symbolic computation applied to the structure of words and sentences, models of morphology and syntax, parsing algorithms.
Wt Qtr. Prereq: 602.01 and 680, or courses in logic and discrete mathematics, Comp/Inf 201 or equiv.

684.02 Computational Models of Grammar II
Computational models of semantic interpretation, and the role of pragmatic knowledge in sentence processing; implementation of current grammatical theories.
Sp Qtr. Prereq: 683.01 and 684.01.

6851 Languages in Contact U G 3, 5
Study of the effects of language contact on the structure of the involved languages; of the characteristics of the individuals and communities involved in language contact.
Prereq: 601.

693 Individual Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Prereq or concur: 601 or permission of instructor. Repeatable to a maximum of 40 cr. hrs. This course is graded S/U.

694 Group Studies U G 1-5
Study of topics not regularly scheduled for seminars in linguistics, under the direction of a faculty member.
Prereq: 601. Repeatable to a maximum of 30 cr. hrs.

6951 Seminar in Anthropological Linguistics U G 5
Prereq: Anthrop 675 or permission of instructor. Repeatable to a maximum of 30 cr. hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr. hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

737 Proseminar in Cognitive Science U G 2
An in-depth examination of the interdisciplinary field of cognitive science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Prereq: Comp/Inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr. hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Philosophy, Psychology, and Speech and Hearing Science.

7801 Formal Pragmatics U G 5
Introduction to contemporary theories of pragmatic phenomena which build on theories of dynamic interpretation in formal semantics.
Prereq: 683.02.

H783 Honors Research U 3-5
Informal conferences to allow full scope to the initiative of the student, who will prepare an honors thesis in consultation with the instructor.
Prereq: 4th yr standing and the completion of departmental honors requirements with a grade of A in at least half of the linguistics courses, including approved related courses; permission of instructor. Under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtr s are required of candidates for the degree B.A. with distinction in linguistics. Repeatable to a maximum of 15 cr. hrs. This course is graded S/U.

785 Seminar in Linguistics U G 1-5
A selected group study, with emphasis on individual writing and presentation.
Prereq: 602 and 603, or permission of instructor. Repeatable to a maximum of 30 cr. hrs.

800 Proseminar in Linguistics G 3
Introduction to the problems, methods, and tools of linguistic research. Recommended for all candidates for grad degrees. This course is graded S/U.

801* Historical Linguistics I G 5
An introduction to the methods, conventions, and literature of comparative-historical linguistics with primary attention to the comparison and reconstruction of Indo-European phonological systems.
Prereq: 601, and either 611 or written permission of instructor.

802* Historical Linguistics II G 5
Advanced work in the comparison and reconstruction of morphological and syntactic systems, primarily Indo-European: detailed examination of some of the results of past and current scholarship.
Prereq: 801.

803* Topics in Indo-European G 5
Study of various Indo-European languages and language families and exploration in depth of specific problems in Indo-European grammar.
Prereq: 802. Repeatable to a maximum of 30 cr. hrs.

810 Seminar in Morphology G 3, 5
Advanced topics in morphological analysis.
Arr. Prereq: 609. Repeatable to a maximum of 30 cr. hrs.

812 Seminar in Semantics G 5
Accounts of semantic judgments in languages, especially within the theory of generative grammar; relationships between syntax, semantics, and language use.
Prereq: 602.02; a course in symbolic logic recommended. Repeatable to a maximum of 30 cr. hrs.

814 Seminar in Pragmatics G 5
An intensive examination of one or more major problems in pragmatics, such as speech acts, implicature, or presupposition.
Prereq. Permission of instructor. Repeatable to a maximum of 30 cr. hrs.

820 Seminar in Syntax G 5
Advanced topics in syntactic analysis.
Prereq: 602.02. Repeatable to a maximum of 30 cr. hrs.

821 Seminar in Phonology G 5
Advanced topics in phonological analysis.
Prereq: 600.02. Repeatable to a maximum of 30 cr. hrs.

822* Seminar in Historical Linguistics G 5
Advanced topics in methods and principles of diachronic analysis.
Prereq: 611 or permission of instructor. Repeatable to a maximum of 30 cr. hrs.

825 Seminar in Advanced Phonetics G 5
Study of specific problems in articulatory and acoustic phonetics at an advanced level.
Prereq: 600. Repeatable to a maximum of 30 cr. hrs.

830 Teaching Introductory Linguistics G 3
Designed to train instructors in the techniques and materials used to teach introductory linguistics courses.
Prereq: 601 or equiv.

861 Seminar in Sociolinguistics G 3-5
Advanced topics in sociolinguistics.
Arr. Prereq: 661. Repeatable to a maximum of 30 cr. hrs.

871 Seminar in Psycholinguistics G 3-5
Advanced topics in psycholinguistics.
Sp Qtr. Prereq: 671. Repeatable to a maximum of 30 cr. hrs.

899 Interdepartmental Seminar G 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr. hrs with permission of dept.

993 Individual Studies G 1-5
Assigned reading and individual research.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr. hrs. This course is graded S/U.

999 Research in Linguistics G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Master of Business Administration

100 Gerlach Hall, 2108 Neil Avenue, 292-8511.

800 Financial Accounting and Reporting G 3
Mechanics of income statement, balance sheet, and fund flows; accounting policy choices; financial statement analysis using fund flows; ratios, quality of earnings, sustainable growth rates, and inflation adjustments.
Au Qtr. 2-2 hr cl. Prereq: Enrollment in the structured MBA.

801 Accounting for Decision Making G 2
Cost data for inventory valuation; cost data for decision making (pricing, product-mix, make or buy); cost data for performance evaluation and control.
Wi Qtr. 2-2 hr cl for 5 weeks. Prereq: Enrollment in the structured MBA.

802 Management Accounting G 4
Determination of costs of production and use of these costs in planning, performance evaluation and control.
Au Qtr. 2-2 hr cl. Prereq: Accepting 711 or equiv and enrollment in structured evening MBA program.

805 Business Solution Teams I G 4
Two quarter sequence course that engages teams of MBA students in solution of business problems for real world companies who serve as clients.
Au Qtr. 2-2 hr cl. Prereq: Completion of MBA core courses and enrollment in structured MBA or evening MBA program. This course is Progress ("P") graded. Credit will be awarded upon completion of 806.

806 Business Solution Teams II G 4
Two quarter sequence course that engages teams of MBA or evening MBA students in solution of business problems for real world companies who serve as clients. Continuation of 805.
Wi Qtr. 2-2 hr cl. Prereq: Completion of MBA core courses and enrollment in structured MBA program.

808 International Field Study: Emerging Markets G 4
Course will expand global perspective of business; offer opportunity to apply skills in an emerging market and explore growth strategies of international companies.
Wi Qtr. 2-2 hr cl plus spring break study abroad. Prereq: Permission of instructor and completion of successful interview. Students must participate in field study taken during spring break. Repeatable to a maximum of 6 cr hrs. Full-time MBA’s given first priority.

810 Financial Management G 4
The development of an understanding of financial terminology, instruments, and foundations for analyzing and dealing with the financial management problems of business enterprises.
Wi Qtr. Prereq: Enrollment in structured MBA.

811 Financial Decision Making G 4
Analysis of financial management through case study; financial concepts and techniques used to identify problems, feasible alternatives, and recommendations of best course of action.
Wi Qtr. Prereq: Enrollment in structured evening MBA.

812 Managerial Economics G 4
Introduction to microeconomic theory of demand and supply, including cost and production functions; applications for management decision making and government relations.
Au Qtr. 2-2 hr cl. Prereq: Enrollment in structured MBA Program.

813 National Business Conditions Analysis G 4
Analysis of general economic conditions and their relation to decisions of the firm; methods for decision support and strategic planning.
Su Qtr. 2-2 hr cl. Prereq: Enrollment in structured evening MBA Program.

831 Information Systems for Management Decision Making G 2
The study of the role of the information systems function in organizations and the role of information in the management decision-making process.
Au Qtr. 2 2 hr for 5 weeks. Prereq: Enrollment in structured MBA.

834 Introduction to Selected Topics in MIS G 4
This course examines the role and strategic impact of information systems on business organization, including traditional systems, electronic commerce, and group decision support technologies.
2 2 hr cl. Prereq: Enrollment in structured evening MBA program.

840 Marketing Management G 4
Focuses on the interrelated elements of the marketing mix, its relationship with the other functional areas of management, and marketing responses to the external environment.
Wi, Sp Qtr. Prereq: Enrollment in structured MBA or evening MBA program.

842 Product Management Strategy G 4
Comprehensive examination of product and communication design decisions facing product managers in consumer and industrial firms; case studies and industry-sponsored project; new product development and positioning.
Wi Qtr. Prereq: 840 or equiv or others with permission of instructor.

843 Sales and Channel Management G 4
Activities and problems of first-line sales manager; organizing the sales force, recruiting, training, compensating and motivating the sales force, forecasting, and territory design.
Prereq: 840 or Bus-Mktg 850.

844 Applied Marketing Planning G 4
Basic, practical elements of integrated strategic planning, current, and future planning techniques.
Sp Qtr. Prereq: 840 or equiv or permission of instructor.

845 International Marketing Strategy G 4
Analysis of strategic, political, and philosophical issues faced by management and governments involved in international trade; emphasis on case analysis.
Sp Qtr. Prereq: 840 or Bus-Mktg 850 or permission of instructor; and Bus-Adm 855.

850 Operations Management G 3
Introduction to basic operations principles; exploration of major operating problems; strategic and tactical decision making emphasis on determination of policy for managing productive resources, role of operations manager.
Wi Qtr. 2-2 hr cl for 8 weeks. Prereq: Enrollment in structured MBA.

851 Compelling on Operations G 4
Managing operations as a means for competing in global markets: analyzing processes; capacity; quality; inventory policies in both service and manufacturing settings.
Sp Qtr. 2-2 hr cl. Prereq: Enrollment in structured evening MBA program.

860 Management and Individual Behavior G 3
An overview of factors that influence individual work performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.
Au, Sp Qtr. 2-2 hr cl for 7-8 weeks. Prereq: Enrollment in structured MBA. Repeatable to a maximum of 6 cr hrs.

861 Advanced Issues in the Management of Individual Behavior G 4
Additional discussion of factors that influence individual work performance and techniques to improve it; analytical frameworks for determining effectiveness of given techniques in specific circumstances.
Au Qtr. 2-2 hr cl. Prereq: Enrollment in structured evening MBA Program.

870 Statistical Analysis for Decision Making G 4
Introduction to statistical inference and its use in decision making; major emphasis on achieving an application-oriented understanding of regression analysis.
Au Qtr. Prereq: Enrollment in structured MBA.

871 Modeling for Decision Making G 2
The use of quantitative techniques in practical decision-making situations; emphasis on concepts with relatively little mathematics utilized to describe the techniques.
Wi Qtr. 2-2 hr cl for 5 weeks. Prereq: Enrollment in structured MBA.

872 Optimization Models for Decision Making G 4
Industries must decide how to allocate limited resources to competing activities. This course describes how optimization models can provide information and insight into this decision.
Wi Qtr. 2-2 hr cl. Prereq: Enrollment in structured evening MBA program.

880 Legal and Regulatory Environment G 2
Focuses on the application of law to managerial decisions; designed to provide an appreciation and understanding of the relationship between legal and business strategy.
Sp Qtr. 1-2 hr cl. Prereq: Enrollment in structured MBA.

892 Individual Studies G 1-5
Individual study projects in selected areas in business not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

894 Group Studies G 1-5
Students are given an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 16 cr hrs.
980 Strategy Formulation and Implementation I G 4
Introduction to the nature of corporate strategy, development of a conceptual framework for understanding competition in industries, and the factors that shape competitive success or failure.
Su, Sp Qtr s. Prereq: Successful completion of the 1st yr of structured MBA.

981 Strategy Formulation and Implementation II G 4
Introduction to the strategic significance of social, political, and governmental forces as well as the role financial control systems play in implementing and evaluating strategy.
Wi Qtr. Prereq: 980. Enrollment in structured evening MBA program.

Materials Science and Engineering
477 Watts Hall, 2041 College Road, 292-2553

205 Introduction to Materials Science and Engineering U 3
Structure, processing, properties, and applications of metals, ceramics, polymers, and composite materials.
Su, Au, Wi, Sp Qtr s. 3 1-hr lectures, 1 1-hr rec. Prereq: Math 151 or 161; Physics 131 and Chem 121.

401 Materials Thermodynamics U 4
First three laws of thermodynamics; phase equilibria; reaction equilibria; solution theory; phase diagrams.
Su, Sp Qtrs. 3 1-hr lec, 1 1-hr rec. Prereq: Physics 132, and Math 254 or 263, and minimum CPRH of 2.0; or preq or concur: Chem 123 or 125.

489 Professional Practice in Industry U 2
Preparation of a comprehensive report based on employment experience in a co-op job in industry.
Su, Au, Wi, Sp Qtr s. Arr. Prereq: Admission to co-op program. Repeatable to a maximum of 8 cr hrs. This course is graded SU.

521 Chemistry of Materials 521.01 Chemistry of Materials U G 3
Stoichiometry and heat balances for reactions and processes. Thermodynamics and kinetics of selected reactions.
Au Qtr. 3 1-hr cl. Prereq: 401 and 405.
521.02 Materials Chemistry Laboratory I U G 2
Understanding of phenomena related to diffusion and kinetics.
Au Qtr. 1-hr lecture and 2-hr lab. Prereq: 521.01 or concur: En Graph 167 or concur, or equiv. GEC course.

522 Transport Phenomena in Materials Processing 522.01 Transport Phenomena in Materials Processing U G 3
Fluid flow, heat, and mass transfer as applied to materials processes.
Wi Qtr. 3 1-hr cl. Prereq: 521.01.
522.02 Materials Chemistry Laboratory II U G 2
Techniques related to characterization of particles, flow behavior and temperature measurement.
Wi Qtr. 1-hr lecture and 2-hr lab. Prereq: 521.02 and 522.01 or concurrent registration. GEC course.

523 Ceramic Phase Equilibria U G 3
Principles of phase diagrams, use of equilibrium diagrams in ceramic engineering.
Sp Qtr. 3 1-hr cl. Prereq: 401, 405.

541 Materials Structure I U G 3
Crystal structure and defects in metals, ceramics, and polymers.
Au Qtr. 3 1-hr cl. Prereq: 401, 405.

542 Materials Structure II 542.01 Materials Structure II U G 3
Phase equilibria, solid state diffusion, and introduction to transformations and relation to microstructures.
Wi Qtr. 3 1-hr cl. Prereq: 541; or preq or concur: Eng Mech 440.
542.02 Materials Structure Laboratory U G 2
Experiments and report writing in support of MSE 542.01.
Wi Qtr. 1-hr lecture and 2-hr lab. Prereq: 541; and 542.01 or concurrent registration. GEC course.

543 Materials Structure III U G 3
Structural transformations in materials. Thermodynamics and kinetics of nucleation, growth, sintering, precipitation, and martensitic reactions.
Sp Qtr. 3 1-hr cl. Prereq: 542.01.

561 Mechanical Properties of Engineering Materials U G 3
Continuum and microstructural aspects of mechanical behavior; elastic and plastic behavior under simple and combined stress systems.
Wi Qtr. 3 1-hr cl. Prereq: 541; or preq or concur: Eng Mech 440.

562 Failure of Engineering Materials 562.01 Failure of Engineering Materials U G 3
Fundamentals of brittle and ductile failure; continuum and microstructural aspects.
Sp Qtr. 1 1-hr cl. Prereq: 541
562.02 Mechanical Properties Laboratory U G 2
Selected laboratory experiments of elastic properties, plastic properties, and failure of engineering materials.
Sp Qtr. 1-hr lecture and 2-hr lab. Prereq: 562.01 or concurrent registration. GEC course.

565 Crystal Mechanics U G 3
Relationship of mechanical properties to the microstructure of crystalline materials.
Sp Qtr. 3 1-hr cl. Prereq: 542.01 and 561.

571 Characterization of Materials 571.01 Characterization of Materials U G 3
Techniques and applications of thermal analysis, x-ray diffraction and scanning electron microscopy.
Sp Qtr. 3 1-hr lec. Prereq: 543 or concurrent registration.
571.02 Characterization of Materials Laboratory U G 2
Use of thermal analysis, x-ray diffraction and scanning electron microscopy for analysis of selected metallic, ceramic and composite materials.
Sp Qtr. 1-hr lab, 2-hr lab. Prereq: 571.01 concurrent. GEC course.

589 Industrial Experience U 2
Preparation of a comprehensive report based on employment experience in a co-op program.
Su, Au, Wi, Sp Qtr s. Not available for technical elective credit. Repeatable to a maximum of 8 cr hrs. This course is graded SU.

602 Analysis of Die Casting Processes U G 3
Fundamental principles underlying the die casting process; integration of cast component design, process requirements and economics.
Wi Qtr. Offered even-numbered academic yrs. 2 1/2-hr cl. Prereq: Sr or Grad standing in Engineering. Cross-listed in Industrial and Systems Engineering.

610 Analyses of Casting Defects U G 3
To enable students to identify common casting defects, understand their origins, and learn to control and/or eliminate casting defects.
Wi Qtr. Offered odd-numbered academic yrs. 3 1-hr cl. Prereq: Sr standing in engineering.

611 Metal Processing (Casting & Powder Metallurgy) U G 3
Near net shape manufacturing via solidification and powder metallurgy methods.
Sp Qtr. 2 1-hr. cl., 1 2-hr. lab. Prereq: 522.01 and 543.

612 Structure of Materials U G 3
Structure of crystalline materials including silicates and technical ceramics, crystal chemistry and physics.
Au Qtr. 3 1-hr cl. Prereq: 405, Geol Sci 414.

621 Materials Issues in Microelectronics 621.01 Materials Issues in Microelectronics U G 3
Microfabrication with emphasis on processing, structure, and stability of materials in microelectronics.
Wi Qtr. 3 1-hr cl. Prereq: 543 and 671.
621.02 Microelectronics Processing Laboratory U G 1
Laboratory experience in microelectronics processing.
Wi Qtr. 1/2-hr lecture and 2 1/2-hr lab. Prereq: 621.01 or concurrent registration.

623 Ceramic Raw Materials U G 3
Ceramic raw materials including physical and chemical characteristics; powder preparation, mixing, milling, and batch calculations.
Au Qtr. 3 1-hr cl. Prereq: 543.

624 Forming of Ceramics U G 3
Theoretical and practical aspects of ceramic processing before firing. Relationship between forming methods and the flow properties of particulate systems.
Wi Qtr. 3 1-hr cl. Prereq: 623.

625 Thermal Processing of Ceramics U G 3
Ceramic drying and firing processes. Emphasis is on microstructure development: calcining, solid state sintering, liquid phase sintering, vitrification, and grain growth.
Sp Qtr. 3 1-hr cl. Prereq: 624.
630 Process Metallurgy U G 3
Mass transfer as applied to metallurgical processes, reactor design, analysis and design of processes for extracting and refining metals.
Sp Qtr. 3 1-hr cl. Prereq: 522.01.

632 Glass Science U G 3
The science of glass including glass structure and formation related to composition, kinetics of crystallization, phase separation, glass transition, and viscosity.
Wt Qtr. 3 1-hr cl. Prereq: 612.

633 Refractories Technology U G 3
An introduction to refractory raw materials and their formulation as industrial refractories; consideration of applications, testing, engineering, and technical concepts.
Sp Qtr. Offered even-numbered academic years. 3 1-hr cl. Prereq: 401, 521.01.

642 Structure and Properties of Solid Polymers U G 3
Structure and properties of solid polymers; polymer processing will be briefly addressed.
Au Qtr. 3 1-hr cl. Prereq: 405.

651 Physical Metallurgy of Steel
651.01 Physical Metallurgy of Steel U G 3
Physical metallurgy of plain carbon and alloy steels.
Au Qtr. 3 1-hr cl. Prereq: 542.01.
651.02 Microstructures of Metallic Materials U G 1
Laboratory studies of microstructural characteristics of metallic materials and the effects of prior treatments or methods of manufacture.
Wt Qtr. 3 1-hr lab. Prereq: 542.01 and 651.01 or concurrent registration.

653 Ceramic Properties and Processing Laboratory U G 1
Processing and properties of ceramic materials.
Wt Qtr. 3 1-hr lab. Prereq: 521.02, 522.02, and 562.02.

655 Non-Ferrous Metallurgy U G 3
Physical metallurgy of important non-ferrous alloys; their properties and applications.
Wt Qtr. 3 1-hr cl. Prereq: 585.

666 Deformation Processing U G 3
Continuum behavior of metals; analysis of common forming operations; slab calculations, ideal work methods, upper bound analysis, other numerical methods.
Wt Qtr. 3 1-hr cl. Prereq: 562.01.

671 Electronic Properties of Materials I U G 3
Electronic theory of solids, metals, semiconductors, and insulators. Principles and fabrication of simple semiconductor devices.
Au Qtr. 3 1-hr cl. Prereq: 543, Physics 133.

672 Electronic Properties of Materials II U G 3
Continuation of Materials Science and Eng 671. Magnetic, optical, dielectric, and superconducting properties of materials. Behavior of simple devices based on these properties. Materials issues in device fabrication.
Wt Qtr. 3 1-hr cl. Prereq: 671.

680 Analysis and Modeling in Materials Science U G 3
Applications of analytical and numeric mathematical methods to problems in materials science.
Au Qtr. 3 1-hr cl. Prereq: Math 254 or 263; En Graph 167 or equiv.

681 Corrosion U G 3
Principles of corrosion engineering; definitions, types of corrosive attack and methods of minimization and prevention.
Au Qtr. 2 1-hr cl, 2 1-hr lab. Prereq: 4th yr standing in engineering.

684 Structure and Properties of Composite Materials U G 3
Structure and properties of polymer matrix, metal matrix, and ceramic matrix composites. Tailoring of properties by composite design.
Wt Qtr. 3 1-hr cl. Prereq: 543 and 561.

685 Materials Selection U G 3
Case studies in materials selection and substitution of competing materials.
Sp Qtr. 3 1-hr cl. Prereq: 4th yr standing in MatScEn, Metal En, or Ceram En.

693 Individual Studies U G 3
Investigations in areas of advanced non-thesis research. Library and/or research investigations are under the close direction of instructors. Comprehensive report required.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of Instructor. Repeatable to a maximum of 12 or hrs. This course is graded S/U.

694 Group Studies U G 1-6
Special topics.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 or hrs.

695 Senior Design Project
An in-depth design project to foster independent thinking and to develop problem solving skills.
Au, Wi, Sp Qtrs. Arr. Prereq: Sr Standing in MSE. Must be scheduled in the first 2 qtrs of academic year of projected graduation.

695.01 Senior Design Project in Materials Science and Engineering I U 1
Analysis of design problem and formulation of approach to solve problem.
695.02 Senior Design Project II U 2
Execution of design projects with written and oral reports.
Prereq: 695.01.

705 Thermal Methods of Characterization U G 3
Introduction to thermal analysis for characterizing materials for seniors and graduate students in engineering and sciences.
Sp Qtr. Offered even-numbered academic years. 2 1/2-hr cl. Prereq: Sr standing in engineering or science, or permission of instructor.

711 Solidification of Metals and Alloys U G 3
Heat and mass transport associated with solidification; grain morphologies and composition in casting and Welds.
Au Qtr. Offered even-numbered academic years. 3 1-hr cl. Prereq: 542.01 or grad standing in MatScEn or permission of instructor.

715 Principles of the Characterization of Materials U G 3
Fundamentals of beam-solid interactions and their application to the characterization of materials.
Sp Qtr. 3 1-hr cl. Prereq: Math 415 or grad standing in MatScEn or permission of instructor.

721 Metallurgical Transport Phenomena U G 3
Momentum, mass, and heat transport as related to metallurgical processing with computer simulation of complex problems.
Sp Qtr. Offered even-numbered academic years. 3 1-hr cl. Prereq: 521.01, En Graph 167, Math 255 or 415, or grad standing in MatScEn, or permission of instructor.

723 Powder Science U G 3
Scale and importance of high temperature particle interactions and particle structure formation.
Wt Qtr. Offered odd-numbered academic years. 3 1-hr cl. Prereq: 401, 405 or grad standing in MatScEn or permission of instructor.

730 Thermodynamics of Materials U G 4
Thermodynamics of mixtures and phase equilibria relevant to metallurgy and materials science.
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

731 Physical Properties of Glass U G 3
Viscosity, chemical durability and thermal, electrical, optical, and mechanical properties of commercial glasses. Effects of thermal history and composition.
Sp Qtr. Offered even-numbered academic years. 3 1-hr cl. Prereq: 632 or grad standing in MatScEn or permission of instructor.

732 Kinetics and Diffusion U G 4
To provide a detailed understanding of the phenomenological and atomic description of rate limiting steps - diffusion and chemical reaction - during mass transport in solid state materials.
Wt Qtr. 2 2-hr cl. Prereq: Grad standing in MatScEn or permission of instructor.

735 Advanced Corrosion U G 3
Theories and mechanisms of corrosion.
Wt Qtr. 3 1-hr cl. Prereq: Permission of instructor.

736 High Temperature Corrosion U G 3
Corrosion of metals and alloys in high-temperature gases and salts.
Sp Qtr. Offered odd-numbered academic years. 3 1-hr cl. Prereq: Grad standing in MatScEn or permission of instructor.

741 Transmission Electron Microscopy Laboratory G 1
Application of transmission electron microscopy of materials with emphasis on practical experimental methods.
Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: 715 or equiv.

745 Structure of Materials U G 4
Crystallography and crystal structures, effect of symmetry on properties of crystals, and structures of amorphous materials.
Au Qtr. 2 2-hr cl. Prereq: Grad standing in MatScEn or permission of instructor.
Materials Microstructures U G 3
Nature and kinetics of microstructural changes produced by cold work and subsequent aging in ductile materials. Homogeneous and heterogeneous nucleation. Dislocations in crystalline materials with emphasis on FCC materials. Wi Qtr. 2 1/2-hr cl. Prereq: Grad standing in MatSciEn or permission of instructor.

Mechanical Behavior of Materials G 3
Mechanical response of materials to loads and deformation. Sp Qtr. 2 1/2-hr cl. Prereq: Grad standing in MatSciEn or permission of instructor.

Honor Research U 1-3
Honors level analysis of design problem, formulation of approach to solve problem, and execution of design project with written and oral reports. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in MatSciEn. Repeatable to a maximum of 6 cr hrs. Must be scheduled in first two quarters of academic year of projected graduation.

Individual Studies U G 1-6
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of Instructor. This course is graded S/U.

Graduate Seminar and Colloquium U G 1
Discussion of current thesis problems, outstanding current literature and related topics in Materials Science and Engineering. Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. Required of all grad students in MatSciEn each quarter (Su excluded). Up to 6 hrs can be applied toward a Masters degree and up to 12 hrs can be applied toward a Doctorate degree. This course is graded S/U.

Advanced Physics and Chemistry of Glasses G 3
Glass structure and formation related to composition, kinetics of crystallization, phase separation, glass transition. Relation of physical properties to glass structure and composition. Au Qtr. Offered odd-numbered academic years. 3 1-hr cl. Prereq: 632 or equiv, or permission of instructor.

Point Defects in Crystalline Materials G 3
A thermodynamic and electrochemical treatment of the formation, concentrations, mobilities, and interactions of atomic, ionic, and electronic point defects in materials at high temperatures. Wi Qtr. Offered even-numbered academic years. 3 1-hr cl. Prereq: 730 or permission of instructor.

Solid Surfaces and Interfaces G 3
Thermodynamics and structure of surfaces and interfaces. Au Qtr. Offered odd-numbered academic years. 3 1-hr cl. Prereq: 730, 732, 745.

Structural Transformations G 3
Structural transformations in materials with emphasis on basic phenomena. Selected topics will be developed based on classical approaches and recent advances. Wi Qtr. Offered even-numbered academic years. 2 1/2-hr rec. Prereq: 730, 750.

Electron Diffraction G 3
Construction, image formation, and performance of electron microscopes. Electron diffraction in crystals. Wave-Optical and Wave-Mechanical forms. Au Qtr. Offered even-numbered academic years. 2 1/2-hr cl. Prereq: 715.

Plasticity G 3
Continuum and micromechanics of plastic deformation. Au Qtr. Offered odd-numbered academic years. 2 1/2-hr cl. Prereq or conc: 765, or permission of instructor.

Microstructural Elasticity G 3
Interaction of elastic defects in crystalline and continuum solids. Au Qtr. Offered even-numbered academic years. 2 1/2-hr cl. Prereq or conc: 765, or permission of instructor.

Elevated Temperature Deformation G 3
Micromechanics of elevated temperature deformation. Wi Qtr. Offered even-numbered academic years. 2 1/2-hr cl. Prereq or conc: 765, or permission of instructor.

Fatigue of Materials G 3
An overview of the mechanics and mechanisms of fatigue in metals and non-metals. Will include state-of-the-art fatigue concepts and applications of fatigue theory to structural life prediction. Sp Qtr. Offered odd-numbered academic years. 3 1-hr cl. Prereq: Undergraduate courses in mechanical and materials science.

Advanced Topics in Corrosion Science G 3
In-depth understanding of the critical issues in the corrosion of metals, and methods for prevention, control, and experimentation. Sp Qtr. Offered even-numbered academic years. 2 1/2-hr cl. Prereq: 735 or permission of instructor.

Individual Studies G 1-6
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Group Studies G 1-6
Special advanced topics. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

Advanced Topics G 1
Individual study, presentation, and group discussion of topics of current interest in materials science and engineering. Sp Qtr. 1 1-hr cl. Prereq: PhD candidacy in MSE or permission of instructor. Repeatable to a maximum of 3 or hrs.

Topics in Microstructure and Characterization
Topics in Mechanical Behavior and Solid Processing
Topics in Chemical Behavior and Liquid Processing
Topics in Physical Properties

Research in Materials Science and Engineering G 1-18
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Arr. This course is graded S/U.

Mathematics
Mathematics Tower, 231 West 18th Avenue, 292-4975

Precollege Mathematics U 5
Arithmetic of fractions and decimals, basic algebra, graphical equations, geometry, exponents, applications of exponents, lines and slopes, area. Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for any higher numbered math course. Credit will not count toward graduation in any degree program.

Precollege Mathematics II U 4
Systems of equations, arithmetic of polynomials, factoring, fractional equations, variation, quadratic functions, graphs, right angle trig. Au, Wi, Sp Qtrs. 4 cl. Prereq: 050 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for any math course except 050. Credit will not count toward graduation in any degree program.

Reentry Precollege Mathematics U 4
Systems of equations, arithmetic of polynomials, factoring, fractional equations, variation, quadratic equations, functions, graphs, and right angle trig. Su, Au, Wi, Sp Qtrs. 4 cl. Prereq: At least one y of high school algebra, out of high school for 5 or more yrs at time of university enrollment, no formal training in math in the past 5 yrs, and written permission of Dept of Mathematics Office. Not open to students with a mark in any Ohio State math course within the past 5 yrs. Credit will not count toward graduation in any degree program.

Enrichment of Basic College Mathematics U 2
Supplement to Math 104 using small group interaction and active learning to enhance the development of skills necessary to succeed in 104 and subsequent courses.

Basic College Mathematics U 5
Systems of equations, arithmetic of polynomials, rational expressions, factoring, fractional equations, inequalities, exponents, quadratic equations, absolute values, functions, and graphs. Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 050 or satisfactory score on Ohio State Math Placement Test or permission of dept. Not open to students with credit for 130, or 148, or 150, or 151, or to students with credit for 116 prior to Au Qtr 1963. Credit may not count toward graduation in some degree programs.

Mathematics for Elementary Teachers I U 5
Development of basic ideas of arithmetic, algebra, and geometry as appropriate for elementary school teachers. Au, Wi Qtrs. 5 cl. Prereq: 075 or 076 or satisfactory score on Ohio State Math Placement Test. 105N open only to Rank 4 and GRD EDU students, and to students who've applied to GRD EDU.
106 Mathematics for Elementary Teachers II U 5
Continuation of 105.
Wi, Sp Qtrs. 5 cr. Prereq: 105 or written permission of dept. 106N open only to Rank 4 and GRD EDU students, and to students who've applied to GRD EDU.

107 Topics in Mathematics for Elementary Teachers U 5
Further topics in mathematics selected by the instructors to broaden the mathematical perspectives of elementary teachers.
Sp Qtr. 5 cr. Prereq: 106 or written permission of dept.

116 Excursions in Mathematics U 5
Critical thinking and problem solving, with relevant topics met in everyday life; appropriate for non-physical sciences.
Su, Wi, Sp Qtrs. 5 cr. Prereq: 075 or 076 or 074 or satisfactory score on mathematics placement test. Not open to students with credit for 130, 148, 150, or 151.

117 Survey of Calculus U 5
An introduction to differential and integral calculus.
Au, Wi, Sp Qtrs. 5 cr. Prereq: 130 or 148 or 150 or equiv with written permission of dept. Not open to students with credit for 152 or 151. This course is not designated for students pursuing majors in business or the sciences.

130 Mathematical Analysis for Business I U 4
Equations, inequalities, absolute value, polynomial functions, exponential and logarithmic functions, applications to business.
Su, Au, Wi, Sp Qtrs. 4 cr. Prereq: 104 or placement M or N or the OSU Math placement test, or written permission of department. Not open to students with credit for 150 or higher numbered mathematics course; or to students with credit for 148 completed Au 97 or earlier. This course is available for EM credit.

131 Mathematical Analysis for Business II U 4
Matrices, determinants, linear programming, interpretation of graphs, modeling, applications.
Su, Au, Wi, Sp Qtrs. 4 cr. Prereq: 130 or 148 or 150 or written permission of dept. Not open to students with credit for 151.

132 Mathematical Analysis for Business III U 5
Limits, derivatives of polynomial, logarithmic and exponential functions, sigma notation, area under curves, the definite integral, and applications to business.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 130 or 150. Not open to students with credit for 152.

140 Calculus with Review I U 5
Review of polynomial and rational functions, difference quotients, limits, continuity, derivatives, chain rule, higher order derivatives, implicit differentiation, related rates.
Au Qtr. 5 cr. Prereq: Course Code N placement and 4 or more units of college prep math, including trigonometry; or written permission of dept. Not open to students with credit for 148, 150, or 151. The first part of a two-part sequence that consolidates the material of Math 148, 150, 151. The follow up course is Math 141. Students who do not succeed in this course must go back to Math 148.

141 Calculus with Review II U 5
Trigonometric review, differentiation of the trigonometric functions, review of exponential and logarithmic functions, mean value theorem, applications to curve sketching, applied maxima and minima problems.
Wi Qtr. 5 cr. Prereq: Grade of C- or better in 140. Not open to students with credit for 151. The second of a two-part sequence that consolidates the material from 148, 150 and 151 into two courses and prepares students for 152.

148 Algebra and Trigonometry and Their Applications U 4
Applications from chemistry, physics and biology involving integer and rational exponents, solving and graphing linear and quadratic equations, systems of equations, trigonometry of acute angles, vectors and exponential equations.
Su, Au, Wi, Sp Qtrs. 4 cr. Prereq: 104 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 150 or higher numbered mathematics course.

150 Elementary Functions U 5
Inverse functions, logarithmic, exponential and trigonometric functions, and their graphs; complex numbers.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 148 or satisfactory score on Ohio State Math Placement Test or permission of dept. This course is available for EM credit.

151 Calculus and Analytic Geometry U 5
Limits, continuity, derivatives, Mean Value theorem, extrema, curve sketching, related rates, differentiation of the trig, log, and exponential functions.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 150 or satisfactory score on Ohio State Math Placement Test. Not open to students with credit for 161. This course is available for EM credit.

152 Calculus and Analytic Geometry U 5
Integral, area, fundamental theorems of calculus, logarithmic and exponential functions, trigonometric and inverse trigonometric functions, methods of integration, applications of integration, polar coordinates.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 151. Not open to students with credit for 162. This course is available for EM credit.

153 Calculus and Analytic Geometry U 5
Indeterminate forms, Taylor's formula, improper integrals, infinite series, parametric curves, and vectors in the plane; vectors, curves, and surfaces in space.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 152. Not open to students with credit for 263. This course is available for EM credit.

161 Accelerated Calculus with Analytic Geometry U 5
Functions, limits and continuity, derivatives, applications of the derivative, the integral, inverse functions.
Au Qtr. 5 cr. H161 (honors) may be available to students enrolled in an honors program; others by written permission of dept. Prereq: Course Code N, placement and high school calculus experience, or permission of dept. Not open to students with credit for 152. The sequence 161-162-263 covers calculus at an accelerated pace for students with superior algebraic and geometric skills, and with previous calculus experience.

162 Accelerated Calculus with Analytic Geometry U 5
Techniques of integration; improper integrals; applications of the integral; polynomial approximations and Taylor's theorem; infinite sequences and series; tests for convergence; vectors, lines and planes.
Wi, Qtr. 5 cr. H162 (honors) may be available to students enrolled in an honors program; others by written permission of dept. Prereq: 151 or written permission of Math Counselling Office. Prereq for H162: H161 with a grade of C or better or written permission of Honors Committee chairperson. Not open to students with credit for 153.

178 Topics in Mathematics U 2-5
An enrichment course for interested and capable students.
Au, Wi, Sp Qtrs. H187 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

H190 Elementary Analysis I U 5
Special course sequence for superior students.
Au Qtr. 5 cr. Prereq: Permission of dept. H190, H191, and H254 substitute for 151, 152, 153, 254, and 551.

H191 Elementary Analysis II U 5
Continuation of H190.
Wi Qtr. 5 cr. Prereq: H190 with a grade of C or better or written permission of Honors Committee chairperson.

194 Group Studies in Mathematics U 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs.

254 Calculus and Analytic Geometry U 5
Partial differentiation, Lagrange multipliers, multiple integrals, line integrals, and Green's theorem.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 153. Not open to students with credit for 253. This course is available for EM credit.

255 Differential Equations and Their Applications U 5
Basic concepts and methods in solving ordinary differential equations, first and second order, linear differential equations, series solutions, numerical methods, Laplace transforms, physical applications.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 254. Not open to students with credit for 415 or 556.

263 Accelerated Calculus with Analytic Geometry U 5
Multivariable calculus (vector approach), line and surface integrals, vector differential operators.
Sp Qtr. 5 cr. H263 (honors) may be available to students enrolled in an honors program; others by written permission of dept. Prereq: 162 or written permission of Math Counselling Office. Prereq for H263: H162 with a grade of C or better or written permission of Honors Committee chairperson.
283 Number Theory U 3-6
An intensive introduction to mathematics as problem-solving; experimentation, conjecture and proof; divisibility, quadratic fields, geometry of numbers.
Su Qtr. Prereq: Written permission of instructor and performance on a take-home problem set. Each one or two week assignment due at the beginning of the following week.

283.01 Lectures in Number Theory
5 cr for 8 wks.

283.02 Seminar in Number Theory
1-2 hr seminar wk for 8 wks.

284 Special Topics in Mathematics U 2-5
Designed to give groups of able students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. H284 (honors) may be available to students in an honors program; others by permission of Honors Committee chairperson.
Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs.

345 Foundations of Higher Mathematics U 4
Designed to prepare students for higher mathematics; an introduction to logic, proof techniques, set theory, number theory, integers, real numbers.
Au, Sp Qtrs. 4 cr. Prereq: 254 or equiv with written permission of dept.

368 Discrete Mathematical Structures I U 3
Mathematical formalization and reasoning, logic, and Boolean algebra; sets, functions, relations, recursive definitions, and mathematical induction; and elementary counting principles.
Su (1st term) Au, Wi, Sp Qtrs. 3 cr. Prereq: 132 or 152 or permission of dept.

415 Ordinary and Partial Differential Equations U 4
Ordinary, partial, and nonlinear differential equations; Fourier series; boundary value problems; and Bessel functions.
Au, Su, Sp Qtrs. 4 cr. Prereq: 254. Not open to students with credit for 265.

416† Vector Analysis and Complex Variables U 5
Vector algebra and vector operators, line integrals, analytic functions, complex integral theorems, power series, residues, and conformal mapping.
Au Qtr. 5 cr. Prereq: 254. Not open to students with credit for 513, 514, 5651, or 552.

471† Matrices and Linear Algebra U 5
Matrices, systems of equations, R^n, determinants, vector spaces, applications.
Wi Qtr. 5 cr. Prereq: 153 or equiv with written permission of dept. Not open to students with credit for 568 or 571.

487 Advanced Problem Solving U 2
An advanced enrichment course for interested and capable students.
Au Qtr. 2 cr. Prereq: Permission of dept. Not open to students with 6 cr hrs in 487. Repeatable to a maximum of 6 cr hrs. This course is graded E/U.

504 History of Mathematics U 5
Development of mathematics from primitive origins to present form; topics include: development of arithmetic, algebra, geometry, trigonometry, and calculus.
Sp Qtr. 5 cr. Prereq: 580 or 568 or 507 or equiv with written permission of dept.

507 Advanced Geometry U 5
Advanced topics from Euclidean Geometry.
Au, Wi Qtr. 5 cr. Prereq: 152.

510 Topics in Mathematics for Elementary School Teachers U 2-5
Special topics in mathematics appropriate for teachers in the primary and intermediate grades.
Au, Su, Wi, Sp Qtrs. Prereq: 1 yr teaching experience or permission of instructor. Repeatable to a maximum of 10 cr hrs for each one or two week assignment, with written permission of dept. Designed for in-service teachers.

510.01 Geometry
510.02 Properties of Numbers
510.03 Numerical Methods

512 Partial Differential Equations and Boundary Value Problems U 3
Fourier series, orthogonality relations, vibrating string, steady state heat, Laplace transform, and applications.
Su (1st term) Au, Wi, Sp Qtrs. 3 cr. Prereq: 255 or 415 or equiv with written permission of dept. Not open to students with credit for 557.

513 Vector Analysis for Engineers U 3
Vector algebra, vector operators, line integrals, vector integral theorems, curvilinear coordinates; applications.
Au, Wi Qtrs. 3 cr. Prereq: 254. Not open to students with credit for 551.

514 Complex Variables for Engineers U 3
Introduction to complex variables, analytic functions, complex integral theorems, power series, residues, conformal mapping.
Sp Qtr. 3 cr. Prereq: 254 or equiv with written permission of dept. Not open to students with credit for 416, 552, or 654.

520 Linear Algebra U 5
Au Qtr. 5 cr. Prereq: H263 with a grade of C or better, or H264 with a grade of C or better, or written permission of Honors Committee chairperson.

521 Differential Equations U 5
Ordinary, linear and nonlinear differential equations, existence and uniqueness theorems, Fourier series, boundary value problems, systems, Laplace transforms, phase space, stability, and periodic orbits.
Wi Qtr. 5 cr. Prereq: H520 with a grade of C or better or written permission of Honors Committee chairperson.

552 Complex Analysis U 5
Analytic functions, Cauchy integral theory, residue calculus, series representations, and conformal mapping.
Sp Qtr. 5 cr. Prereq: H521 with a grade of C or better or written permission of Honors Committee chairperson. The sequence H520-H521-H522 substitutes for 568 and 569; 255 or 415, 416 or 514 or 552.

530 Probability I U 3
Combinatorial probability, random variables, independence, expectations, variance.
Wi Qtr. 3 cr. Prereq: 254. Not open to students with credit for Stat 520.

540† Geometry and Calculus in Euclidean Spaces and on Manifolds I U 5
The topology of E^n, differentiation of vector valued functions, inverse and implicit function theorems, Riemann and Lebesgue integration in E^n.
Wi Qtr. 5 cr. Prereq: H520, or H263 and 569, or permission of instructor.

541† Geometry and Calculus in Euclidean Spaces and on Manifolds II U 5
Curves and line integrals in E^n, tensor and exterior algebras, differential forms. Integration on manifolds, divergence and Stokes' theorem and applications.
Sp Qtr. 5 cr. Prereq: H540 or permission of instructor.

547 Introductory Analysis I U 3
547-548-549 is an integrated sequence in advanced calculus covering sequences, limits, continuous functions, differentiation, Riemann integral; infinite series, sequences and series of functions, Taylor series, improper integrals.
Au, Wi Qtrs. 3 cr. Prereq: 345 or equiv with written permission of dept. Not open to students with credit for 615.

548 Introductory Analysis II U 3
Continuation of 547.
Au, Wi Qtrs. 3 cr. Prereq: 547 or equiv with written permission of dept.

549 Introductory Analysis III U 3
Continuation of 548; the Riemann-Stieltjes integral; an introduction to the calculus of several variables.
Au, Sp Qtrs. 3 cr. Prereq: 548 or equiv with written permission of dept.

551 Vector Analysis U 5
Vector operations in three dimensions, vector operators, surface area, the theorems of Green and Stokes, the divergence theorem; applications.
Sp Qtr. 5 cr. Prereq: 254. Not open to students with credit for 416 or 513.

552 Introduction to the Theory of Functions of a Complex Variable U 5
Topical discussed include power series expansions, the formula of Cauchy, residues, conformal mappings, and elementary functions in the complex domain.
Su, Wi Qtrs. 5 cr. Prereq: 254. Not open to students with credit for 416 or 514.
556 Differential Equations I U G 3
Systems of linear, first-order differential equations, existence and uniqueness theorems, numerical methods, qualitative theory (phase plane analysis, linearization, stability, limit cycles), and physical applications. Wi Qtr. 3 cl. Prereq: 255, prepr or concur 572.

557 Differential Equations II U G 3
Sturm-Liouville theory, partial differential equations in three or more variables, nonhomogeneous problems, Green's functions, physical applications. Sp Qtr. 3 cl. Prereq: 556.

560 Point-set Topology U G 4

566 Discrete Mathematical Structures II U G 3
Algorithms, efficiency of algorithms, pigeonhole principle, combinatorial identities, inclusion-exclusion, general functions, graphs, Euler tours, Hamiltonian cycles, isomorphism, planarity, colorings, algorithms on weighted graphs, and networks. Su (2nd term), Wi Qtrs. 3 cl. Prereq: 366 or permission of dept.

568 Introductory Linear Algebra I U G 3
The space R^n and its subspaces; matrices as mappings; matrix algebra; systems of equations; determinants; dot product in R^n; geometric interpretations. Su (1st term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 254 or equiv with written permission of dept. Not open to students with credit for 471 or 571.

569 Introductory Linear Algebra II U G 3
Vector spaces over R and C; linear transformations; the polynomial ring R[x]; characteristic values and vectors; inner product spaces; quadratic form reduction; principal axis theorem. Su (2nd term), Au, Wi, Sp Qtrs. 3 cl. Prereq: 568 or equiv with written permission of dept. Not open to students with credit for 572.

571 Linear Algebra for Applications I U G 3
Linear systems of equations; vector spaces, matrices, linear operators; inner products, projections and least squares, approximations or eigenvalue problems; applications. Su (1st term), Au, Sp Qtrs. 3 cl. Prereq: 254. Not open to students with credit for 569 or 601.

572 Linear Algebra for Applications II U G 3
The eigenvalue problem or inner product spaces, projections and least squares approximation; classification of operators and quadratic forms; applications. Su (2nd term), Wi, Qtrs. 3 cl. Prereq: 571 or written permission of dept. Not open to students with credit for 601.

573 Elementary Number Theory U G 5
Utilization of concrete examples to introduce concepts of modern algebra; prime numbers, congruences, Diophantine equations, elementary combinatorial analysis. Sp Qtr (colis-numbered yrs only). 5 cl. H573 (honors) may be available to students enrolled in an honors program; others by written permission of dept. Prereq: 153 or permission of dept. Prereq for H573: Math H191 and H520, or permission of instructor.

574 Geometry U G 5
Euclidean and non-Euclidean geometry; emphasizing algebraic connection; affine and projective planes, duality; topics from: geometry of groups; finite planes, Hilbert's postulates, n-dimensional spaces. Sp (even-numbered yrs only) Qtr. 5 cl. Prereq: 568 or equiv with written permission of dept.

575 Combinatorial Mathematics and Graph Theory U G 5
Some classical puzzles of recreational mathematics; matching theory, graph theory, network flows, and optimization; enumeration techniques; combinatorial designs and coding theory. Wi, Sp Qtrs. 5 cl. Prereq: 568 or written permission of dept.

576 Number Theory through History I U G 5
The integrated honors sequence H576-H577 includes elementary analytic and algebraic number theory and traces its unifying role in development of mathematics through history. Wi Qtr. 3 1.5-hr cl. Prereq: H191 and H520, or permission of dept.

577 Number Theory through History II U G 5
Continuation of H576. Sp Qtr. 3 1.5-hr cl. Prereq: H576 or permission of dept.

578 Discrete Mathematical Models U G 5
Analysis and solution of various applied problems using discrete mathematical models; methods used include graph theory, linear optimization, Markov chains and queues. Au, Sp Qtrs. 5 cl. Prereq: 530 or Stat 425 or equiv, 568, and CptrInf 221.

580 Algebra I U G 3
The integrated algebra sequence 580-581-582 includes elementary number theory, group theory, vector spaces, and linear transformations, field theory. Au, Wi Qtrs. 3 cl. Prereq: 545 and 580 or equiv with written permission of dept. Not open to students with credit for 570, 513, or H590.

581 Algebra II U G 3
Continuation of 580. Wi, Sp Qtrs. 3 cl. Prereq: 580.

582 Algebra III U G 3

588 Practicum in Actuarial Science U 2
Presentations by practicing actuaries on topics drawn from their fields of expertise. Sp Qtr. 1 2-hr cl. Prereq: 3rd yr standing. Open only to actuarial science majors. Sitting for a professional actuarial examination in May while enrolled in this course is required. The deadline for submitting applications to take the actuarial examination may be prior to the start of Spring Quarter and is the responsibility of the student to meet. This course is graded S/U.

590 Algebraic Structures I U G 5
Integers, congruence relations, structure preserving maps, topics from groups, rings, modules, vector spaces, fields. Au Qtr. 5 cl. Prereq: H522 with a grade of C or better or written permission of Honors Committee chairperson. The sequence H590-H591-H592 substitutes for the sequence 580-581-582.

591 Algebraic Structures II U G 3
A continuation of H590. Wi Qtr. 3 cl. Prereq: H590 with a grade of C or better or written permission of Honors Committee chairperson.

592 Algebraic Structures III U G 3
Continuation of H591; further topics in group and field theory and their interrelation; Galois theory. Sp Qtrs. 3 cl. Prereq: H591 with a grade of C or better or written permission of Honors Committee chairperson.

593 Individual Studies U G 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 or hrs. This course is graded S/U.

594 Group Studies U 2-5
Designed to give groups of advanced undergraduate students an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp Qtrs. Prereq: 594 (honors) may be available to students in an honors program; others by permission of Honors Committee chairperson. Prereq: Permission of instructor. Repeatable to a maximum of 10 or hrs.

601 Mathematical Principles in Science I U G 3
Linear algebra in finite dimensions, abstract vector spaces, linear transformations, fundamental subspaces, complex inner product spaces. Au Qtr. 3 cl. Prereq: 568 or 571 or equiv.

602 Mathematical Principles in Science II U G 3

603 Mathematical Principles in Science III U G 3
An introduction to partial differential equations (pdes) that arise in the mathematical and engineering sciences. Sp Qtr. 3 cl. Prereq: 415 or equiv and 602.

603.01 Mathematical Principles in Science III, A
General properties and methods of solution of hyperbolic, parabolic, and elliptic pdes that arise in science and engineering.

603.02 Mathematical Principles in Science III, B
Mathematical principles and methods in the physical and engineering sciences including Fourier theory, Green's function theory, study of pdes illustrated mainly by the Helmholtz equation.

606 Introduction to Numerical Analysis of Partial Differential Equations U G 3
Classification of partial differential equations; finite difference methods for elliptic, parabolic and hyperbolic PDE's; stability, convergence, error estimation; introduction to finite elements. Sp Qtr. Prereq: 512 and 572 or equiv with permission of instructor.
607 Essentials of Numerical Analysis U G 5
Standard problems of numerical analysis, error analysis, and actual computational algorithms.
Su Qtr: 3.2-hr cl. Prereq: 548 or 652 or permission of the Graduate Studies Committee.

610 Topics In Mathematics for Teachers
Special topics in mathematics for teachers at the secondary level.
Su, Au, Wi, Sp Qtrs. Prereq: 1 yr teaching experience or permission of instructor. Each decimal subdivision, except 610.05, repeatable to a maximum of 10 or hrs. with written permission of dept. Designed for inservice teachers.
610.01 Geometry U G 1-5
610.02 Algebra U G 1-5
610.03 Approximation Methods U G 1-5
610.04 Probability U G 1-5
610.25 Special Projects U G 1
Prereq: Enrollment in mathematics MA specialization or written permission of dept. This decimal subdivision (610.25) is graded S/U.

611+ Geometric Linear Algebra U G 4
Two- and three-dimensional linear algebra over the real numbers; geometric interpretations, both Euclidean and affine.
Prereq: 568 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary school teachers.

612+ Elementary Geometry from an Advanced Standpoint U G 4
Axiomatic development of elementary geometry of plane and space, introduction to non-Euclidean geometry.
Au Qtr: 2.2-hr cl. Prereq: 507 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary school teachers.

613+ Number Theory and Algebra U G 4
Arithmetic and order properties of the integers, unique factorization, congruence arithmetic, Chinese Remainder Theorem, unit groups, polynomial algebra, roots of unity, non-unique factorization.
Wi Qtr: 2.2-hr cl. Prereq: 580 or equiv with written permission of dept; enrollment in mathematics MA specialization. Not open to students with credit for 670. Recommended for secondary school teachers.

614+ Calculus from a Numerical Viewpoint U G 4
A review of major concepts and theorems of differential and integral calculus using a numerical approach.
Prereq: 254 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary school teachers.

615+ Foundations of Calculus U G 4
Real number system, Dedekind cuts, basic set theory, introductory metric topology, connectedness, limits, continuity, the derivative, properties of differentiable functions, Riemann sums, integration.
Sp Qtr: 2.2-hr cl. Prereq: 614 or equiv with written permission of dept; enrollment in mathematics MA specialization. Not open to students with credit for 661. Recommended for secondary school teachers.

616+ Numerical Methods in Actuarial Mathematics U G 4
Finite differences, difference operators, interpolation, summation, difference equations; applications to actuarial science and finance.
Au Qtr: 2.2-hr cl. Prereq: 254 and 471 or 569; or permission of instructor.

618 Theory of Interest U G 3
Mathematical techniques of use in analyzing financial transactions involving interest: measurement of interest, force of interest, annuities-certain, applications to actuarial science.
Au Qtr: 2.11/2-hr cl. Prereq: 254 or permission of instructor.

621+ Probability U G 4
A problem oriented approach to major probability concepts: independence, conditional probabilities, expected values, binomial, normal, and other distributions, law of large numbers.
Prereq: 254 or equiv with written permission of dept; enrollment in mathematics MA specialization. Recommended for secondary school teachers.

630 Mathematics of Life Contingencies I U G 3
Individual risk models; survival distributions and life tables; life insurance and life annuities.
Au Qtr: 2.11/2-hr cl. Prereq: 618 and Stat 520 or equiv, or permission of instructor.

631 Mathematics of Life Contingencies II U G 3
Continuation of 630; net premiums and net premium reserves; multiple life functions; multiple decrement models.
Wi Qtr: 2.11/2-hr cl. Prereq: 630.

632 Mathematics of Life Contingencies III U G 3
Continuation of 631; valuation theory for pension plans; insurance models including expenses; nonforfeiture benefits and dividends; topics of current interest in life and casualty contingencies.
Sp Qtr: 2 1/4-hr cl. Prereq: 631.

634+ Linear Mathematical Models U G 4
Linear equations, inequalities, convex sets, matrix algebra, linear programming, duality, applications of linear mathematical models to business, transportation, flow, and the social and behavioral sciences.
Au Qtr: 4 cl. Prereq: 117 or 131 or 151 or permission of dept.

635+ Game Theory U G 3
Concept of a game, minimax theorem; linear programming.
Wi Qtr: 3 cl. Prereq: 568 or equiv or permission of dept.

640 Introductory Topology U G 3
The topology of the plane, Euclidean n-space, and metric spaces; emphasis on elementary ideas in topology.
Su Qtr: 3 cl. Prereq: 254 or equiv. Not open to students with credit for 655.

645 Foundations of Higher Mathematics U G 3
Introduction to logic, set theory, and methods of proof; the real numbers, natural numbers, induction, well-ordering, the integers, uncountability of the reals.
Au Qtr: 3 cl. Prereq: Grad standing in math or written permission of dept chairperson.

647 Set Theory U G 3
Axiomatic set theory, transfinite induction and theory of ordinals, order type of characterizations, cardinal arithmetic and structure, and principles of choice.
Sp Qtr: 3 cl. Prereq: 547 or 580 or equiv with permission of dept.

648 Mathematical Logic I U G 3
The syntax and semantics of sentential logic and first order logic; completeness and compactness theorems for first order logic.
Au Qtr: 3 cl.

649 Mathematical Logic II U G 3
Continuation of 648; decidability and undecidability of systems and structures for number theory; Gödel's incompleteness theorems and recursive functions; second order logic.
Wi Qtr: 3 cl. Prereq: 648 or permission of instructor.

650 Principles of Mathematical Analysis U G 5
Riemann-Stieltjes integral; uniform convergence and interchange of limit processes, special functions, Fourier series.
Su Qtr: 5 cl. Prereq: 547 or permission of Graduate Advising Committee.

651 Introduction to Real Analysis I U G 5
Real numbers, infinite series, and sequences.
Au Qtr: 5 cl.

652 Introduction to Real Analysis II U G 5
Continuous functions, differentiable functions and functions of bounded variation; Riemann-Stieltjes integral.
Wi Qtr: 5 cl. Prereq: 651.

653 Introduction to Real Analysis III U G 5
Measurable sets and functions, elementary theory of the Lebesgue integral.
Sp Qtr: 5 cl. Prereq: 652.

654 Complex Variables U G 3
Complex arithmetic, geometry, conformal mapping, analytic functions, and residues.
Su Qtr: 3 cl. Prereq: Permission of dept. Recommended primarily for grad students in science and engineering. Not open to students with credit for 514 or 502.

655 Elementary Topology I U G 4
Continuity, compactness, connectedness in metric and general topological spaces, completeness in metric spaces.
Au Qtr: 4 cl. Prereq: Permission of dept.

656 Elementary Topology II U G 4
Continuation of 655; products, quotients, separation axioms, convergence, metrization and compactifications for general topological spaces.
Wi Qtr: 4 cl. Prereq: 655.

657 Elementary Topology III U G 4
Continuation of 656; fundamental group and covering spaces.
Sp Qtr: 4 cl. Prereq: 655.
6651* Modern Mathematical Methods in Relativity Theory I U G 4
Geometry in Minkowski space-time; physical interpretations; tensors; exterior calculus; manifolds; Lie derivatives; parallel transport; torsion; curvature: Cartan's two structural equations; Einstein Field equations.
Wi Qtr. 4 cl. Prereq: 254 and Physics 133 or equiv. with permission of dept.

669 Introduction to Number Theory U G 5
Basic concepts of divisibility, congruence, reciprocity, and primitive roots as introduction to algebra with emphasis on techniques of proof.
Su Qtr. 5 cl. Prereq: 254 or equiv.

670 Algebra I U G 5
Elementary theory of groups, permutation groups, Polya theory of counting, rings and ideals, polynomials.
Ai Qtr. 5 cl. Prereq: Permission of dept.

671 Algebra II U G 5
Continuation of 670; vector spaces, linear transformations, canonical forms for matrices, linear programming, orthogonality.
Wi Qtr. 5 cl. Prereq: 670 or permission of dept.

572 Algebra III U G 5
Continuation of 671; quadratic forms, finite fields, various applications.
Sp Qtr. 5 cl. Prereq: 671 or permission of dept.

574 Survey of Combinatorial Mathematics U G 4
Enumeration, equivalence relations, generating functions, graph theory, optimization, and combinatorial designs.
Su Qtr. 3 cl. Prereq: 569 or equiv. with permission of instructor.

575t Applied Discrete Mathematics I U G 4
Graph theory, trees, cycles, coboundaries, electrical networks, network flows, transportation problems, linear programming, integer programming, use of algorithms will be stressed.
Au Qtr. 4 cl. Prereq: 672 or equiv. with written permission of dept.

576t Applied Discrete Mathematics II U G 4
Combinatorial designs, applications in experiments, coding theory, computational complexity, enumeration theory with physical applications.
Wi Qtr. 4 cl. Prereq: 675 or equiv with permission of dept.

577 Applied Discrete Mathematics III U G 4
Topics in graph theory, designs, codes, enumeration problems, algorithms and computational complexity.
Sp Qtr. 4 cl. Prereq: 676 or equiv with permission of dept.

683 Topics in Number Theory and Algebra U G 4
Joint creative problem activity through daily problem solving sets in number theory.
Su Qtr. 4 cl. Prereq: Permission of instructor.

693 Individual Studies U G 1-5
Individual conferences, assigned readings, and reports on minor investigations.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

694 Group Studies U G 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

701† Mathematical Methods in Science III U G 5
Introduction to tensor analysis with applications to geometry; elements of the calculus of variations with applications to physical problems.
Sp Qtr. 3 1/2-4 hr cl. Prereq: 501 or equiv or permission of dept.

702 Orthogonal functions, linear integral equations of first and second kinds, relations to ordinary differential equations; Volterra's equation, boundary value problems, practical methods of solution.
Au Qtr. 3 cl. Prereq: 602.

703t Integral Equations and Eigenvalue Problems II U G 3
Distribution of eigenvalues, self-adjointness, definiteness, Green's functions, minimal properties, approximation of eigenvalues, eigenfunction expansions, Ritz method, iteration method, matrix eigenvalue problems, finite differences.
Wi Qtr. 3 cl. Prereq: 702.

705t Special Functions U G 3
Power series developments, asymptotic expansion, gamma functions, cylindrical functions, spherical harmonics, orthogonal polynomials, hypergeometric functions, theta functions, elliptic functions and integrals, numerical techniques.
Wi Qtr. 3 cl. Prereq: 501 and 602.

707 Numerical Methods in Scientific Computing I G 3
Numerical solution of dynamical systems and evolution equations, linear and nonlinear systems, boundary value problems, bifurcation diagrams, form fit of data, interpolation, and approximation theory.
Au Qtr. 3 cl. Prereq: 556 and 573; or equiv; and working knowledge of Fortran, or written permission of instructor.

708 Numerical Methods in Scientific Computing II G 3
Continuation of 707; numerical quadrature, integral equations, iterative procedures, multi-grid techniques, computation of eigenvalues and eigenvectors, Hopf bifurcation, and optimization.
Wi Qtr. 3 cl. Prereq: 707.

709 Numerical Methods in Scientific Computing III G 3
Numerical solution of ordinary differential equations, consistency, stability and convergence, reaction-diffusion equations, phase diagrams, domains of attraction, strange attractors, and chaos.
Sp Qtr. 3 cl. Prereq: 708.

712 Applied Functional Analysis I G 3
Advanced linear algebra; introduction to normed and Hilbert spaces; projections and bounded operators; emphasis on matrix and function space applications.
Au Qtr. 3 cl. Prereq: 653 and 671, or 601 and 602, or permission of instructor. Not open to students with credit for 857, 858, or 859.

713 Applied Functional Analysis II G 3
Dual spaces, bilinear functionals, compact operators; Sobolev norms, applications to finite elements and integral equations.
Wi Qtr. 3 cl. Prereq: 712 or permission of instructor. Not open to students with credit for 857, 858, or 859.

714 Applied Functional Analysis III G 3
Spectral theory of linear operators, distribution theory, and applications.
Sp Qtr. 3 cl. Prereq: 713 or permission of instructor. Not open to students with credit for 857, 858, or 859.

715 Differential Equations I U G 3
Linear and non-linear systems of ordinary differential equations; phase plane analysis; stability, bifurcation, chaos.
Au Qtr. 3 cl. Prereq: 255, 572, and 652; or permission of instructor. Not open to students with credit for 604.

716 Differential Equations II U G 3
Partial differential equations of mathematical physics, classification, characteristics; Sturm-Liouville theory, separation of variables.
Wi Qtr. Prereq: 514, 653, and 715; or permission of instructor. Not open to students with credit for 605.

717 Differential Equations III U G 3
Eigenfunction expansions, special functions, Green's functions, Fourier and Laplace transforms.
Sp Qtr. 3 cl. Prereq: 514 and 716; or permission of instructor.

722 Theory of Probability I G 4
Measure and integration; random variables; independence; convergence in probability, almost everywhere, and in the mean; conditional probability and expectation.

723 Theory of Probability II G 4
Weak convergence; characteristic functions; central limit theorems; random walks; introduction to martingales.
Wi Qtr. 3 cl, 1 lab hr. Prereq: 722. Not open to students with credit for Stat 723. Cross-listed in Statistics.

724 Theory of Probability III U G 4
Continuation of 723.
Sp Qtr. 3 cl, 1 lab hr. Prereq: 723.

727 Scientific Computing Laboratory I G 1
Designed to teach the computational tools required to write and use numerical codes to study physical systems. (another high-level language); concurs: 727.

728 Scientific Computing Laboratory II G 1
Designed to teach the computational tools required to write and use numerical codes to study physical systems.
Wi Qtr. 1 2-hr cl. Prereq: 727; concurs: 728.

729 Scientific Computing Laboratory III G 1
Designed to teach the computational tools required to write and use numerical codes to study physical systems.
Sp Qtr. 1 2-hr cl. Prereq: 728; concurs: 729.
735 Seminar in Teaching College Mathematics for International Graduate Students
G 3
Preparation of international graduate students for the teaching of college level mathematics courses.
Su Qtr. 3-2 hr. cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

736 Seminar in Teaching College Mathematics for Domestic Graduate Students
G 3
Preparation for teaching lower-division mathematics courses.
Su Qtr. 3-2 hr. cl. Prereq: Permission of Graduate Advising Committee. This course is graded S/U.

745 Advanced Mathematical Logic I
U G 3
Basic proof theory and model theory: completeness, interpolation and definability theorems, elimination of quantifiers, compactness, Löwenheim-Skolem Theorems, elementary extensions, and categoricity.
Au Qtr. 3 cl. Prereq: 649 or permission of instructor.

746 Advanced Mathematical Logic II
U G 3
Incompleteness and undecidability; basic recursion theory; Turing machines, Church's thesis, recursive and recursively enumerable sets, Turing degrees, and the arithmetical hierarchy.
Wi Qtr. 3 cl. Prereq: 745 or permission of instructor.

747 Advanced Mathematical Logic III
U G 3
Basic axiomatic set theory; Zermelo-Fraenkel set theory, the cumulative hierarchy, ordinals and cardinals, constructibility, and forcing.
Sp Qtr. 3 cl. Prereq: 746 or permission of instructor.

750 Real Analysis I
U G 5
Relative extremes in partial orders; additive and countable additive set functions; extensions of set functions; integration, differentiation, applications.
Au Qtr. 5 cl. Prereq: 653.

751 Real Analysis II
U G 5
Continuation of 750.
Wi Qtr. 5 cl. Prereq: 750.

752 Real Analysis III
U G 5
Continuation of 751.
Sp Qtr. 5 cl. Prereq: 751.

753* Introduction to Complex Analysis I
U G 5
Families of holomorphic and meromorphic functions, geometrical methods of the theory of functions, conformal transformations; including the Cauchy integral theorem, Runge's theorem, Riemann mapping theorem.
Au Qtr. 5 cl. Prereq: 653.

754* Introduction to Complex Analysis II
U G 5
Analytic continuation, general analytic functions, algebraic, entire, elliptic, the gamma and zeta function, Dirichlet's series, Picard's theorems, Mittag-Leffler's theorem, Stirling's formula.
Wi Qtr. 5 cl. Prereq: 753.

767* Introduction to the Theory of Approximation I
U G 4
Approximation by polynomials and trigonometric polynomials, Chebyshev's theory of best approximation and its generalizations; interpolation processes and mechanical quadrature; orthogonal polynomials and elements of harmonic analysis.
Au Qtr. 4 cl. Prereq: 653 or equiv with permission of dept.

768* Introduction to the Theory of Approximation II
U G 4
A continuation of 767.
Wi Qtr. 4 cl. Prereq: 767 or equiv with permission of dept.

770 Abstract Algebra I
U G 5
Permutation groups, solvable groups, composition series, polynomial rings, unique factorization domains, canonical forms, bilinear forms, free modules, tensor products, Galois theory, algebraic closure, transcendental extensions.
Au Qtr. 5 cl. Prereq: 672 or equiv with permission of instructor.

771 Abstract Algebra II
U G 5
A continuation of 770.
Wi Qtr. 5 cl. Prereq: 770 or equiv with permission of dept.

772 Abstract Algebra III
U G 5
A continuation of 771.
Sp Qtr. 5 cl. Prereq: 771 or equiv with permission of dept.

775 Combinatorics and Graph Theory I
U G 5
Transversal theory, network flows, matroids, linear programming, Ramsey theory.
Au Qtr. Prereq: 672.

776 Combinatorics and Graph Theory II
U G 5
Combinatorial designs and geometries, difference sets, orthogonal Latin squares, coding theory, enumeration theory including Möbius inversion, Polya theory, and generating functions.
Wi Qtr. Prereq: 776.

777 Combinatorics and Graph Theory III
U G 5
Planar graphs and embeddings in surfaces, graph connectivity, algebraic graph theory.
Sp Qtr. Prereq: 776.

780 Number Theory I
U G 3
Algebraic number theory.
Au Qtr. 3 cl. Prereq: 772.

781 Number Theory II
U G 3
Diophantine equations.
Wi Qtr. 3 cl. Prereq: 780.

782 Number Theory III
U G 3
Analytic number theory.
Sp Qtr. 3 cl. Prereq: 781.

783 Honors Research
U 3-5
A program of reading and research for each student with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a cumulative p-hr ratio of 3.50 in math; permission of instructor under whose supervision the work is to be completed and of the ASC Honors Committee. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

787 Graduate Problem Seminars
U G 3
Topics helpful in problem solving in fundamental areas of mathematics practice with problems in a specific area of mathematics.
Su Qtr. 3 cl. Prereq: Permission of Graduate Advising Committee. Each decimal subdivision repeatable to a maximum of 9 cr hrs.

787.01 Problems in Abstract Algebra
787.02† Problems in Complex Analysis
787.03 Problems in Real Analysis
787.041 Problems in Topology

804* Applied Complex Variables and Asymptotics I
U G 3
Methods of complex variables.
Au Qtr. 3 cl. Prereq: 653, 654, and 717; or permission of instructor.

805* Applied Complex Variables and Asymptotics II
U G 3
Asymptotic methods and their application to ordinary differential equations.
Wi Qtr. 3 cl. Prereq: 804.

806* Applied Complex Variables and Asymptotics III
U G 3
Asymptotic and complex variable methods applied to linear and nonlinear partial differential equations.
Sp Qtr. 3 cl. Prereq: 805.

807* Numerical Solution of Partial Differential Equations I
U G 3
Finite difference methods for parabolic and hyperbolic partial differential equations.
Au Qtr. 3 cl. Prereq: 602 or 717, 709, and Fortran experience; or permission of instructor.

808* Numerical Solution of Partial Differential Equations II
U G 3
Continuation of 807.
Wi Qtr. 3 cl. Prereq: 807.

809 Numerical Solution of Partial Differential Equations III
U G 3
Special topics in the numerical solution of partial differential equations.
Sp Qtr. 3 cl. Prereq: 808.

820* Ordinary Differential Equations I
U G 3
Modern theory of ordinary differential equations; stability, asymptotic analysis, Lyapunov exponents, stable manifolds, perturbation methods, and bifurcation theory.
Au Qtr. 3 cl. Prereq: 715 or permission of instructor. Not open to students with credit for 760.

821* Ordinary Differential Equations II
U G 3
Continuation of 820: differential equations on manifolds, structural stability, integrable and nonintegrable systems; chaos and strange attractors; applications.
Wi Qtr. 3 cl. Prereq: 820. Not open to students with credit for 761.

822* Ordinary Differential Equations III
U G 3
Continuation of 821.
Sp Qtr. 3 cl. Prereq: 761 or 821 or permission of instructor.
835* Partial Differential Equations I G 3
First order PDE’s, theory of characteristics, second order PDE’s, classifications, standard methods of solution, nonlinear equations.
Wi Qtr. 3 cl. Prereq: 717 or permission of instructor. Not open to students with credit for 764.

836* Partial Differential Equations II G 3
Continuation of 835.
Sp Qtr. 3 cl. Prereq: 835 or permission of instructor. Not open to students with credit for 764.

837† Partial Differential Equations III G 3
Continuation of 836.
3 cl. Prereq: 836 or permission of instructor.

840† Algebraic Geometry I G 3
Varieties over algebraically closed fields.
Au Qtr. 2.72-min cl. Prereq: 772.

841† Algebraic Geometry II G 3
Schemes, sheaves, and cohomology.
Wi Qtr. 2.72-min cl. Prereq: 840.

842† Algebraic Geometry III G 3
Curves and surfaces.
Sp Qtr. 2.72-min cl. Prereq: 841.

846 Topics in Discrete Mathematics G 2-5
Su, Au, Wi, Sp Qtrs. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

851 Differential Geometry I G 3
Curves, surfaces, fundamental forms, tensors, and connections.
Wi Qtr. 3 cl. Prereq: 655, 751, and 771.

852 Differential Geometry II G 3
Continuation of 851.
Sp Qtr. 3 cl. Prereq: 851.

854 Lie Groups I G 3
Integration on manifolds, Lie groups, classical groups, homogeneous spaces.
Wi Qtr. 3 cl. Prereq: 651, 751, and 771.

855 Lie Groups II G 3
Continuation of 854.
Sp Qtr. 3 cl. Prereq: 854.

857* Introduction to Functional Analysis I G 3
Au Qtr. 3 cl. Prereq: 552 and 751.

858* Introduction to Functional Analysis II G 3
Continuation of 857.
Wi Qtr. 3 cl. Prereq: 857.

859* Introduction to Functional Analysis III G 3
Banach Algebras, spectral theory, harmonic analysis, fixed-point theorems; applications to analysis.
Sp Qtr. 3 cl. Prereq: 857 and 858.

860 Algebraic Topology I G 3
Singular homology theory.
Au Qtr. 3 cl. Prereq: 657.

861 Algebraic Topology II G 3
Continuation of 860; general cohomology theories.
Wi Qtr. 3 cl. Prereq: 960.

862 Algebraic Topology III G 3
Continuation of 860 and 861; fibrations and homotopy theory.
Sp Qtr. 3 cl. Prereq: 861.

863* Potential Theory I G 3
Newtonian potentials, boundary value problems; logarithmic potential, elliptic partial differential equations.
Sp Qtr. Prereq: 552 and permission of dept.

865 Topics in Applied Mathematics G 2-5
Su, Au Qtrs. 2-5 cl. Prereq: Written permission of dept. Repeatable to a maximum of 20 cr hrs.

866* Differential Topology I G 3
Differential manifolds and differential maa, tangent bundles, vector bundles and transversality.
Au Qtr. 3 cl. Offered in odd-numbered years. Prereq: 657 or permission of instructor.

867† Differential Topology II G 3
Singular homology and cohomology, Poincare duality, intersection numbers, cobordism theory.
Wi Qtr. 3 cl. Offered in even-numbered years. Prereq: 866 or permission of instructor.

868* Differential Topology III G 3
Characteristic classes and the theory of fibre bundles.
Sp Qtr. 3 cl. Offered in even-numbered years. Prereq: 867 or permission of instructor.

869† Mathematical Theory of Communication and Control G 2-5
Sp Qtr. 2-5 cl. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

870 Topics in Graph Theory G 2-5
Topics of current research interest.
Au, Wi, Sp Qtrs. Prereq: 777 and permission of dept. Repeatable to a maximum of 15 cr hrs.

872 Group Theory I G 4
Properties of groups, extensions, transfer, generators and defining relations, representation theory, permutation groups.
Au Qtr. 4 cl. Prereq: 672 or 772.

873 Group Theory II G 4
Continuation of 872.
Wi Qtr. 4 cl. Prereq: 872.

874 Group Theory III G 4
Continuation of 873.
Sp Qtr. 4 cl. Prereq: 873.

875 Combinatorics Seminar G 2-5
Recent research articles in combinatorics are read and presented by the students.
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 15 cr hrs.

8801 Nonlinear Waves I G 3
Fundamental theory of linear and nonlinear waves; recent developments in the theory of nonlinear waves.
Au Qtr. 3 cl. Prereq: 715 or permission of instructor.

881† Nonlinear Waves II G 3
Continuation of 880.
Wi Qtr. 3 cl. Prereq: 880 or permission of instructor.

882† Nonlinear Waves III G 3
Continuation of 881.
Sp Qtr. 3 cl. Prereq: 881 or permission of instructor.

893 Individual Studies G 1-5
Individual assigned readings and reports on research investigations.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies G 1-5
When need is sufficient, the department will offer under this number a course on some phase of mathematics not covered in its regular offerings.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 30 cr hrs.

931 Ergodic Theory I G 3
Measureable transformations, mixing and ergodicity, existence of invariant measures, contraction operations on function spaces, ergodic theorems.
Au Qtr. 3 cl. Prereq: 751.

932 Ergodic Theory II G 3
Continuation of 931.
Wi Qtr. 3 cl. Prereq: 931.

939 Topics in Probability Theory G 2-5
Various advanced topics in probability theory.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.
252 Mathematics

949 Topics in Logic  G  2-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

950 Topics in Real Analysis  G  2-5
Su, Au, Wi, sp Qtrs. Prereq: permission of dept. Repeatable to a maximum of 20 cr hrs.

951 Topics in Complex Analysis  G  2-5
Su, Au, Wi, Sp Qtrs. 2-5 cr. Prereq: 754. Repeatable to a maximum of 20 cr hrs.

953 Topics in Topology  G  2-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 45 cr hrs.

957 Topics in Differential Geometry  G  2-5
Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

961 Topics in Functional Analysis  G  2-5
Topics to be chosen from current research papers.
Su, Au, Wi, Sp Qtrs. 2-5 cr. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

970 Topics in Representation Theory  G  2-5
Topics in the representation theory of various algebraic structures.
Su, Au, Wi, Sp Qtrs. 2-5 cr. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

974 Topics in Homological Algebra  G  2-5
Topics selected from current research articles.
Su, Au, Wi, Sp Qtrs. 2-5 cr. Prereq: 373 or permission of department. Repeatable to a maximum of 20 cr hrs.

975 Topics in Geometry  G  2-5
Topics to be chosen from current research papers.
Su, Au, Wi, Sp Qtrs. 2-5 cr. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

978 Topics in Ring Theory  G  2-5
Topics selected from current research papers.
Su, Au, Wi, Sp Qtrs. 2-5 cr. Prereq: 772. Repeatable to a maximum of 20 cr hrs.

981 Topics in the Theory of Groups  G  2-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

982 Topics in Algebra  G  2-5
Topics selected from current research papers.
Su, Au, Wi, Sp Qtrs. 2-5 cr. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

983 Topics in Number Theory  G  2-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs.

984 Seminar on Actuarial Science  G  2-5
Current topics in actuarial science.
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

985 Seminar in Group Theory  G  2-5
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

986 Seminar in Algebra  G  2-5
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

988 Seminar in Number Theory  G  2-5
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

990 Seminar on Geometry  G  2-5
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

991 Seminar in Probability Theory  G  2-5
Topics selected from current research papers.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

992 Seminar in Applied Mathematics  G  2-5
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in 998. This course is graded S/U.

995 Seminar in Ergodic Theory  G  2-5
Topics selected from current research papers.
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

996 Seminar in Analysis  G  2-5
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

997 Seminar in Topology  G  2-5
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

999 Research G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Mechanical Engineering

2075 Robinson Laboratory, 206 West 18th Avenue, 292-2289

250 Numerical Methods in Mechanical Engineering  U 3
Au, Wi, Sp Qtrs. 2 11/2-hr cl. Prereq: Enrollment as mech eng major or written permission of mech eng dept.

284 Group Studies in Mechanical Engineering  U 1-6
Special topics in mechanical engineering; the particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor.

481 System Dynamics and Vibrations  U 3
Modeling of mechanical and electrical systems; first and second order systems; and analytical, computer, and experimental solution methods. Hastings.
Au, Wi, Sp Qtrs. 2 cl, 1 2-hr lab. Prereq: 250 and Elec Eng 300.

482 System Dynamics and Electromechanics  U 4
Dynamics of general linear systems, thermofuid system dynamics, and electromechanics with emphasis on applications in mechanical engineering. Rizzoni.
Au, Wi, Sp Qtrs. 2 11/2-hr cl, 1 2-hr lab. Prereq: 481 and 503; and prereq or concorr: 504.

489 Professional Practice in Industry  U 2
Actual employment in a co-op program job in industry and the preparation of a comprehensive report based on a pre-assigned outline. Waldron.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to Co-op program in mech eng. Repeatable to a maximum of 8 cr hrs. This course is graded S/U, and may only be counted as a free elective.

500 Engineering Thermal Sciences  U 4 G
Introduction to thermodynamics, fluid mechanics, and heat transfer with engineering applications. Rich.
Au, Wi, Sp Qtrs. 4 cl. Prereq: Math 415, and Physics 133 or permission of dept. Open to students enrolled in college of engineering only. Not open to students majoring in mech eng.

501 Thermodynamics I  U  G  4
A study of basic engineering thermodynamics. Moran.
Au, Wi, Sp Qtrs. 2 2-3-hr cl. Prereq: Chem 121, Eng Mech 430, Math 255 or 415 and enrollment as an engineering major.

502 Thermodynamics II  U  G  3
Continuation of 501. Moran.
Au, Wi, Sp Qtrs. 2 11/2-hr cl. Prereq: 250 and 501.

503 Fluid Dynamics I  U  G  3
A study of the basic concepts, fundamental equations, and applications of fluid mechanics to engineering problems. Guzennec.
Au, Wi, Sp Qtrs. 2 11/2-hr cl. Prereq: 250 and 501.

504 Fluid Dynamics II  U  G  3
Continuation of 503. Korpela.
Au, Wi, Sp Qtrs. 2 11/2-hr cl. Prereq: 502 and 503.

505 Introduction to Nuclear Science and Engineering  U  G  3
Discussion of nuclear energy and nuclear radiators; sources, methods of utilization, and projections for future engineering uses. Blue.
Au, Sp Qtrs. 2 11/2-hr cl. Prereq: Math 255 or 415 and Physics 133, or permission of instructor. Not open to students with credit for Nuclear En 505. Cross-listed in Nuclear Engineering.
510 Heat Transfer U G 3
A study of the fundamental conducted, convective, and thermal radiation energy transfer with engineering applications. Vafai. 
Au, Wi, Sp Qtrs. 2 1/2-hr cl. Prereq: 501, and 504 or Civil Eng 413.

512 Fluid Mechanics and Heat Transfer Laboratory U G 2
Experiments in fluid mechanics and heat transfer. Vafai. 
Au, Wi, Sp Qtrs. 1 4-hr lab. Prereq: 510 or permission of department. This course represents the labs formerly included in Mech Eng 504 and 510.

553 Kinematics and Dynamics of Machinery U G 4
Motion and force analysis in mechanisms such as planetary linkages and cams; introduction to the synthesis of planetary linkages and simple cam systems. Kinchel. 
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Eng Mech 430 or Physics 283, Mech Eng 250 and enrollment in an engineering major or permission of the mech eng dept.

561 Failure Modes, Stress Analysis, and Failure Prevention Principles U G 4
A study of the application of the general principles and empiricism of mechanics of solids to the creative design of mechanical equipment. Bushby. 
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 250, MatSci&En 405 and Ind Eng 311 or permission of the dept.

562 Design of Selected Machine Elements I U G 3
Continuation of 561. Hamrock. 
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 561.

563 Design of Selected Machine Elements II U G 3
Continuation of 561. Hamrock. 
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 561 and 553.

564 Senior Design Group Project U G 4
Methodology of intermediate design and practice in the design of a specific system which may utilize principles of any engineering discipline; written assignments and oral presentation. Moran, Luchscher. 
Au, Wi, Sp Qtrs. 3 2-hr lab. Prereq: 510; a second writing course and preq or conc: 565. Offered in cooperation with Nuclear Engineering. GEC course.

565 Mechanical Engineering Design U 3
Three courses in an integrated sequence constituting a capstone mechanical design experience including technical communications. Bailey. 1 cl, 2 2-hr lab. Not open to students with credit for 564, 561, 694X, 684Y or 694Z. These courses will integrate design and engineering practice with a focus on real mechanical engineering design problems provided by industrial sponsors.

565.01 Mechanical Engineering Design 
Au Qtr. Prereq: 565 and 2nd writing course or permission of instructor.

565.02 Mechanical Engineering Design 
Wi Qtr. Prereq: 565.01.

565.03 Mechanical Engineering Design 
Sp Qtr. Prereq: 565.01.

566 Machine Design Laboratory U G 1
Laboratory to teach analytical and experimental techniques used in machine design. Luchscher. 
Au, Wi, Sp Qtrs. 1 2-hr lab. Prereq: 561.

570 Mechanical Engineering Measurements U G 5
A theoretical and experimental study of the principles of operation and performance characteristics of measuring instruments used in mechanical engineering; written assignments and oral presentation. Houser. 
Au, Wi, Sp Qtr. 2 cl. 1 4-hr lab. Prereq: 482; a second writing course and preq or conc: 510. GEC course.

571 Principles of Automatic Control U G 4
A theoretical and experimental study of the principles of operation of feedback control systems, including servomechanisms and process control. Srinivasan. 
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl, 1 2-hr lab. Prereq: Agri Eng 525 or preq or conc 570.

580 Special Topics in Vehicle Development U 2
Topics of special interest in vehicle development. Studies include analysis, design, fabrication and testing of vehicles. Topics are announced in quarter prior to quarter offered. Houser. 
Su, Au, Wi, Sp. Prereq: Jr standing in engineering or written permission of instructor. Repeatable to a maximum of 8 cr hrs in any or a combination of decimal subdivisions. Up to 4 cr hrs applicable as BSME technical electives.
641 Heating, Ventilating, and Air Conditioning U G 3
A study of design techniques, practices, components, and systems for typical environmental control applications such as human comfort.
Christensen.
Wi Qtr. 2 1/2-hr cl. Prereq: 500; or 501 and prereg or concur 510; or grad standing in mech eng.

642 Introduction to Absorption Refrigeration U G 3
Introductory course in the fundamentals of absorption refrigeration. Topics include properties of absorbing mixtures, lithium bromide systems, ammonia-water systems; advanced systems will be covered briefly.
Christensen.
Sp Qtr. 2 1/2-hr cl. Prereq: 510 or permission of instructor. Open only to students with sr or grad standing.

650 Machinery Dynamics and Vibrations U G 4
Machinery dynamics, shock and vibration control topics including balancing, rotordynamics,啸还想 dynamic, damping, impacts, absorbers, frequency analysis, and modal analysis experiments.
Houser.
Au Qtr. 3 cl, 1 2-hr lab. Prereq: 482, 553, and prereg or concur: 570; or permission of instructor.

654 Land Vehicle Dynamics U G 3
Study of the principles and design methodology of automotive vehicles; design and analysis of suspension and braking systems. Guenthner.
Sp Qtr. 2 1/2-hr cl. Prereq: 482 and 562 or grad standing in mech eng or permission of instructor.

652 Introduction to Mechanics of Composite Structures U G 4
An introduction to the macroscopic analysis of anisotropic composite structures including governing equations, strength and stiffness advantages and failure envelopes. Busby.
Au Qtr. 4 cl. Prereq: Eng Mech 220 or equiv or permission of instructor. Not open to students with credit for Civil En 662 or Eng Mech 662. Cross-listed in Civil Engineering and Engineering Mechanics.

664 Mechanical Engineering Computer-Aided Design I U G 4
Methodology and practice in computer-aided design of components and systems utilizing principles of several mechanical engineering disciplines. Busby.
Au Qtr. 3 cl, 1 2-hr lab. Prereq: 510 and 561; Math 415; and En Graph 167 or written permission of course supervisor.

666 Acoustics Problems in Engineering U G 3
A study of the fundamentals of acoustics and noise control including design criteria based on hearing damage and other human responses to sound. Singh.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 3rd yr or grad standing in science or ENG or permission of instructor.

672 Control Systems Design U G 4
A study of the theoretical and experimental procedures involved in the design of feedback control systems including servomechanisms and process control. Srinivasan.
Sp Qtr. 2 1 1/2-hr cl, 1 2-hr lab. Prereq: 571 or grad standing in mech eng or permission of instructor.

674 Introduction to Mechatronics U G 3
Au Qtr. 2 1 1/2-hr lec. Prereq: 482 or Elec Eng 320 or equiv, or permission of instructor.

675* Design of Fluid Power Systems U G 3
Study of the principles and design methodology of fluid power transmission and control components and systems; emphasis on dynamic analysis with laboratory and computer simulation demonstrations. Singh.
Au Qtr. Offered odd numbered academic years. 2 1 1/2-hr cl. Prereq: 482 and 504; or prereg or concur 562, or grad standing in mech eng, or permission of instructor.

H860 Digital Data Acquisition and Signal Processing U G 3
Methodology and practice of computer-aided experimentation and signal processing techniques; frequency analysis, diagnostics, system identification, and random data processing. Guzucius.
Sp Qtr. 2 cl, 1 2-hr lab. Prereq or concur: 481, jr standing in dept or equiv, 3.40 cumulative pt-hr ratio, and permission of dept. Not available for audit. Open to Honors and combined BS/MS students only.

H861 Undergraduate Honors Program Research U G 1-3
Honors students are offered the opportunity to pursue independent projects/research; presentations and thesis writing included. Guzucius.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in dept or equiv, 3.40 cumulative pt-hr ratio, and permission of dept; Not available for audit. Repeatable to a maximum of 6 cr hrs. Open to Honors and combined BS/MS students only.

682 Design for Manufacturing U G 4
Principles of CAD/CAM and design for automatic manufacturing and assembly; integration of design and manufacturing; simulation of manufacturing processes. Lily.
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl, 1 2-hr lab. Prereq: 581 or Ind Eng 523 or grad standing. Not open to students with credit for 562 or Ind Eng 662. Cross-listed in Industrial and Systems Engineering.

683 CAD/CAM Laboratory for Rapid Design Prototyping U G 3
Rapid design prototyping using engineering workstations, CAD/CAM software; and table-top CNC milling machines, lathes, and injection-molding machine. Kinzel.
Au, Wi, Sp Qtrs. 1 2-hr cl, 1 2-hr lab. Prereq: 561 or Ind Eng 565; or grad standing in mech eng, ind eng or in the manufacturing systems and engineering program. Not open to students with credit for 582 or Ind Eng 683. Cross-listed in Industrial and Systems Engineering.

687 Introduction to Design in Biomedical Engineering U G 3
Sp Qtr. 2 1 1/2-hr cl. Prereq: 561 or grad standing in engineering or permission of instructor.

693 Individual Studies in Mechanical Engineering U G 2-10
Designed to give the advanced student opportunity to pursue special studies not otherwise offered; work undertaken will be selected from automotive and internal combustion machinery, combustion and fuels, heat transfer, heating, ventilating, air conditioning, industrial hydraulics, machine design, refrigeration, steam power plants, and thermodynamics. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs or with a maximum of 10 cr hrs in any one topic. This course is graded S/U.

694 Group Studies in Mechanical Engineering U G 1-6
Special topics in mechanical engineering. The particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered. Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Waldron.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition. as well as all travel and subsistence costs.

700 Transport Processes U G 3
A parallel, systematic study of the three transport processes of mass, momentum, and energy from the continuum viewpoint. Moran.
Su Qtr. 3 cl. Prereq: 510 and Math 415 or written permission of course supervisor.

701 Gas Dynamics U G 3
An analytical study of one and two dimensional steady flows and one dimensional unsteady flow. Sammich.
Au Qtr. 2 1 1/2-hr cl. Prereq: 504 and Math 415 or grad standing in mech eng or permission of instructor.

702 Advanced Engineering Thermodynamics U G 3
A study of the fundamentals of thermodynamics from the classical viewpoint with emphasis on the use of the first and second laws for the analysis of thermal systems. Moran.
Sp Qtr. 2 1 1/2-hr cl. Prereq: 502 and Math 415 or written permission of course supervisor.

705 Fundamental Concepts in Fluid Mechanics G 3
In-depth derivation of equations and principles governing fluid flow with an emphasis on formulation of problems. Conti.
Au Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in Mech Eng or permission of instructor.

707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport U G 3
Wi Qtr. 2 1 1/2-hr cl. Prereq: 510 or Math 512 or Nucl En 660, Cptr/Hlt 541, and En Graph 167. Not open to students with credit for Nucl En 707 or 767. Cross-listed in Nuclear Engineering.

710 Fundamental Concepts in Heat and Mass Transfer U G 3
In-depth derivation of equations and principles governing heat and mass transfer with an emphasis on formulation of problems. Vafai.
Au Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in mech eng or permission of instructor.
716 Probabilistic Reliability and Safety Analysis U G 3
Modeling techniques for probabilistic reliability and safety analysis of large
process systems such as found in nuclear, chemical and mechanical
systems. Aldemir.
Sp Qtr. 2 1½-hr cl. Prereq: Grad standing in nucl or mech eng or
permission of instructor. Not open to stu-ents with credit for Nucl En 716.
Cross-listed in Nuclear Engineering.

726 Introduction to Combustion U G 3
Introduction to thermodynamics and kinetics of combustion and to the role
of diffusion in combustion systems; applications to evaporation of fuel
droplets, catalytic conversion, and coal combustion. Eisenberg.
Wi Qtr. 2 1½-hr cl. Prereq: 504; pre-req or concur: 510.

730 Internal Combustion Engine Modeling G 3
Comprehensive coverage of spark-ignited internal combustion engines
modeling (fluid dynamics, thermodynamics and combustion). Selamet.
Sp Qtr. 2 1½-hr cl. Prereq: Mech Eng 630 or permission of instructor.
Specifically targeted to grad students and selected undergraduates working in the
area of internal combustion engine development, modeling and control.

736 Nuclear Power Plants U G 3
A study of thermal and mechanical design aspects and economics of
nuclear power plants and processes. The thermodynamics of operating nuclear
plants (SINWR's in PFWR's and BWR's) are emphasized. Christensen.
Wi Qtr. 2 1½-hr cr. Prereq: Nucl En 505 and 501 or 500 with permission
of instructor. Not open to students with credit for 636 or Nucl En 636 or
736. Cross-listed in Nuclear Engineering.

737 Heat Transfer Applications in Nuclear Reactor Systems U G 3
The heat transfer applications in nuclear reactor systems include but are
not limited to: heat transfer in PWR and BWR fuel rods, coolant, and
reactor internals. Christensen.
Sp Qtr. 2 1½-hr cl. Prereq: 636 or Nucl En 636 and Mech Eng 510 or 500
with permission of instructor. Not open to students with credit for Mech Eng
637, or Nucl En 637, or 737. Cross-listed in Nuclear Engineering.

751* Application of Computer Graphics to Kinematic Synthesis and
Analysis U G 4
Application of interactive computer graphics to the kinematic synthesis of
linkages; external use of the RCG for computer graphics facility, Kinzel.
Wi Qtr. Offered even numbered academic years. 3 cr, 1 2-hr lab. Prereq:
553 and En Graph 167 or equiv. Not open to students with credit for 651.

752 Mechanical Design of Manipulators and Robots U G 3
Principles of hardware and software design of industrial robots and related
devices; includes use of actual industrial robot programming procedures.
Waldrum.
Au Qtr. 2 1½-hr cl. Prereq: Eng Mech 430 and Math 568, or permission
of instructor.

754 Land Vehicle Dynamics Lab U G 1
Lab and field tests of an action vehicle to measure vehicle inertia,
geometric, suspension and steering characteristics in order to generate
parameters for computer simulations. Guenther.
Sp Qtr. 1 2-hr lab. Prereq or concur: 654. Existing software packages such as
ADAMS, VDANL and MATLAB will be used in solving vehicle dynamic
problems using principles of multi-body system analysis.

760 Form Synthesis and Applied Stress Analysis of Machinery U G 3
A study of concepts, principles, and procedures related to stresses and
strains for the design and analysis of machine parts. Kinzel.
Wi Qtr. 2 1½-hr cl. Prereq: 562 and 563 or grad standing in engineering.
Not open to students with credit for 661. This class is one of the core
courses in the M.S. program in Mechanical Engineering.

761 Optimization in Mechanical Design U G 3
Application of analytical optimization methods to the solution of deterministic
and probabilistic mechanical design problems; introduction to interactive
optimization using RCG for computer graphics facilities. Kinzel.
Sp Qtr. 2 1½-hr cl. Prereq: 562 or 563 or permission of instructor. Not open
to students with credit for 661.

762 Structural Composites U G 3
An introduction to the analysis and design synthesis of beams, columns,
rods, plates and panels made of structural composites. Lee.
Wi Qtr. 3 cl. Prereq: 662, or Civil En 662 or Eng Mech 662 or permission
of instructor. Not open to students with credit for Civil En 762 or Eng Mech

763 Advanced Design of Machine Elements U G 4
A study of the advanced concepts in mechanical design analysis and
failure behavior of materials. Lee.
Au Qtr. 2 2-hr cl. Prereq: 562 and 563 or equiv or grad standing in mech
eng.

764* Advanced Gear Design U G 3
A survey of advanced computer techniques to design spur and helical
gears. Techniques will be taught in form of several small and one large
capstone project. House.
Wi Qtr. (Odd years). 4 1-hr cl. Prereq: 562, 563 or permission of instructor.

765 Principles of Tribology U G 3
Mechanisms of friction, wear, and lubrication that govern interfacial behavior;
applications of basic theories to solutions of friction and wear problems.
Bhushan.
Au Qtr. 2 1½-hr cl. Prereq: Grad standing or permission of instructor.

766* Engineering Acoustics U G 3
A course in engineering acoustics covering the phenomena by which
acoustic energy is generated and transmitted, with applications to mechanical
machinery. Singh.
Sp Qtr. Offered odd numbered academic years. 2 1½-hr cl. Prereq: 666 or
permission of instructor.

767 Fluid Film Lubrication U G 3
Hydrodynamic lubrication applied to journal and thrust bearings;
elasto-hydrodynamic lubrication applied to rolling-element bearings and
gears. Hamrock.
Wi Qtr. 2 1½-hr cl. Prereq: 561 or permission of instructor.

770 Measurement System Application and Design U G 4
A theoretical and experimental study of measurement instrumentation;
emphasis on both principles of operation and analysis and design techniques
for measurement systems of a mechanical and electromechanical nature.
House.
Wi Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 570 or grad standing in mech eng or
permission of instructor. Not open to students with credit for 671.

771* Design Of Fiber Optic Systems U G 4
Introduction to mechanical and systems aspects of fiber optics including
wave guiding of light, system components, optical fiber sensors, and
design for industrial applications. Hastings.
Sp Qtr. Offered odd numbered academic years. 2 1½-hr cl, 1 2-hr lab.
Prereq: 570 or permission of instructor.

773 Applied Digital Control U G 4
Theory and application of digital control system design techniques to the
control of physical systems; lab sessions deal with implementation of
trolers using personal computer. Menon.
Wi Qtr. 2 1½-hr cl, 1 2-hr lab. Prereq: 571 or equiv. Not open to students with credit for Mech Eng 673.

777* Automotive Noise, Vibration, and Harshness Control I U G 3 or 4
An integrated study of acoustics, shock and vibration, and dynamic design
issues with emphasis on automotive case studies and problem solving
methodology. Singh.
Au Qtr (odd years). 2 1½-hr cl (3 or option); 4 cr for project work, time arr.
Prereq: Grad standing in mech eng, elect eng, or permission of instructor.
Part of a sequence emphasizing automotive systems engineering designed for
MS degree students and practicing engineers.

777* Automotive Noise, Vibration, and Harshness Control II U G 3 or 4
Continuation of 777 with focus on source-path-receiver identification,
modal analysis, passive/active control, and machinery diagnostics. Singh.
Wi Qtr. (even years). 2 1½-hr cl (3 or option); 4 cr for project work, time arr.
Prereq: 777 or permission of instructor. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

779* Automotive Noise, Vibration, and Harshness Control III U G 3 or 4
Continuation of 778 with focus on advanced modeling and experimental
methods, structural-acoustic interactions, and flow-induced noise and
vibration. Singh.
Sp Qtr. (even years). 2 1½-hr cl (3 or option); 4 cr for project work, time arr.
Prereq: 777. Part of a sequence emphasizing automotive systems engineering designed for MS degree students and practicing engineers.

780 Lumpred Parameter System Analysis U G 3
Lumped parameter system analysis of mechanical, thermal, hydraulic,
pneumatic, and electromechanical systems; system response to periodic,
torquing, and random excitation; computer and physical system
demonstrations. Sirivivasan.
Au Qtr. 2 1½-hr cl. Prereq: Math 415 or permission of instructor. Not open
to students with credit for Mech Eng 680.

7811* Powertrain Dynamics G 3
Overview of the major dynamic phenomena that characterize powertrain
behavior. Emphasis on interaction between substrums. The predominant
natural frequencies of the powertrain will be described. Rizzoni and
Sirivivasan.
Au Qtr. Offered even-numbered academic years. 3lec. Prereq: 780 or 880
or equiv, or permission of instructor.
782 * Advanced Topics and Projects in Powertrain Control G 3
Treatment of advanced topics in control systems as applied to powertrain systems control. Rizzoni and Srinivasan.
Sp Qtr. 2 1/2-hr cl. Prereq: 781 and Elec Eng 753.01.

H873 * Undergraduate Honors Program Research II 1-3
Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included. Guzennec.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Sr standing in mech eng (or equiv). Students must have a GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 6 or hrs.

803* Fundamentals of Thermodynamics II G 3
Introduction to the fundamentals of thermodynamics from the microscopic viewpoint. Rich.
Au Qtr. Offered odd numbered academic years. 2 1/2-hr cl. Prereq: 802.

806* Viscous Flow of Fluids G 3
Theory of viscous fluids; exact solutions of the Navier Stokes equations, creeping flows, and boundary layers. Vafai.
Wi Qtr. Offered even numbered academic years. 2 1/2-hr cl. Prereq: 504.

807* Conduction Heat Transfer G 3
A study of the general heat transfer equations and their application to heat transfer in solids. Korpela.
Sp Qtr. Offered even numbered academic years. 2 1/2-hr cl. Prereq: 510.

808* Laminar Convection Heat Transfer G 3
Laminar forced convection in pipes; laminar thermal boundary layers and entrance effects; stagnation point heat transfer; free convection boundary layers and plumes. Korpela.
Wi Qtr. Offered odd numbered academic years. 2 1/2-hr cl. Prereq: 806 and 807.

809* Thermal Radiation Heat Transfer G 3
Au Qtr. Offered even numbered academic years. 2 1/2-hr cl. Prereq: 807.

810* Inviscid Flows G 3
Kinematics of inviscid flows; circulation and vorticity; the structure of vortices; two and three dimensional vortex flows; the Euler equations and the effect of compressibility. Comilsk.
Wi Qtr. Offered odd numbered academic years. 2 1/2-hr cl. Prereq: 705 or equiv.

811 Computational Fluid Dynamics G 4
Advanced numerical methods for solving Navier-Stokes equations as well as equations for inviscid and boundary layer flows. Vafai.
Sp Qtr. 2 1/2-hr cl. Prereq: 707 or Aero Eng 615. Not open to students with credit for Aero Eng 870. Cross-listed with Aeronautical and Astronautical Engineering 870.

813* Turbulent Flow and Heat Transfer G 3
Study of turbulent flows, with emphasis on the calculation of heat transfer in turbulent internal and external flows. Guzennec.
Sp Qtr. Offered odd numbered academic years. 3 cl. Prereq: 705 and 710.

814* Optical Techniques in Reacting and Nonreacting Flows G 3
Measurements and visualizations based on elastic and inelastic scattering and laser-induced fluorescence and background materials on optics, quantum mechanics, lasers, and detectors. Samimi.
Wi Qtr. Offered even numbered academic years. 2 1/2-hr cl. Prereq: Grad standing in engineering/ science.

815** Multiphase Flow, Heat, and Mass Transfer in Porous Media G 3
Current theories on flow, heat, and mass transfer in porous media and an understanding of the mechanisms involved in multiphase transport in porous media. Vafai.
Sp Qtr. Offered odd numbered academic years. 2 1/2-hr cl. Prereq: 806 or permission of instructor.

818* Advanced Analytical Methods in Mechanical Engineering G 3
Transform and Green's function methods for solution of problems arising in heat conduction, vibration of continuous bodies, and mechanics of fluids; asymptotic evaluation of integral representations of these solutions. Comilsk and Korpela.
Au Qtr. Offered odd numbered academic years. 2 1/2-hr cl. Prereq: 807 or 850 or equiv. Not open to students with credit for 861.

826* Combustion G 3
A study of chemical thermodynamics and kinetics, the basic equations of change, and application of fundamentals to combustion in engineering systems. Essenhigh.
Sp Qtr. Offered even numbered academic years. 2 1/2-hr cl. Prereq: 726 or permission of instructor.

837* Advanced Topics in Tribology G 3
Current and advanced research topics in friction, wear, and lubrication vital to the successful operation of machine elements. Bhusan.
Sp Qtr. Offered odd numbered academic years. 2 1/2-hr cl. Prereq: 765 and 767 or permission of instructor.

850* Dynamics of High Speed Machinery G 3
An advanced study of the interrelationships among forces, motions, and masses as related to rigid or elastic machine members. Parker.
Wi Qtr. Offered odd years. 2 1/2-hr cl. Prereq: 850 and 880 or equiv.

851* Kinematic Geometry of Mechanisms G 3
Kinematics and statics of spatial mechanisms including robotic mechanisms. Waldron.
Sp Qtr. Offered even numbered academic years. 2 1/2-hr cl. Prereq: 752 or permission of instructor.

859* Sliding Mode Control in Electro-Mechanical Systems G 3
Sliding mode control for decoupling of the design procedure and low sensitivity with respect to uncertainties, and application to control of electromechanical systems. Rizzoni.
Au Qtr. Offered odd years. 3 1-hr cl. Prereq: 571 or Elec Eng 551. Cross-listed in Electrical Engineering.

860* Advanced Mechanical Design G 3
A study of concepts, principles, and phenomenological theories related to the failure-prevention aspect of mechanical design. Busby.
Au Qtr. Offered even years. 2 1/2-hr cl. Prereq: 561 and Math 415.

862* Advanced Mechanics of Structural Composites G 3
An introduction to current important topic areas in structural composites; among these topics are fracture mechanics and models, energy method modeling, dynamic structural response, and numerical modeling schemes. Busby.
Sp Qtr. Offered odd years. 2 1/2-hr cl. Prereq: 762 or Civil En 702 or Eng Mech 702 or permission of instructor. Not open to students with credit for Civil En 862 or Eng Mech 862. Cross-listed in Civil Engineering and Engineering Mechanics.

866* Hydrodynamic Stability of Fluid Motions G 4
Instability of inviscid and viscous parallel flows; thermal and centrifugal instability boundary-layer transition; and concepts of linear, nonlinear, and secondary instability analysis. Herbert.
Sp Qtr. Offered even numbered academic years. 2 1/2-hr cl. Prereq: Aero Eng 570 or 600 equiv, or permission of instructor. Not open to students with credit for Aero Eng 866. Cross-listed in Aeronautical and Astronautical Engineering.

870* Digital Signal Analysis of Mechanical Systems G 3
Conceptual, measurement, and numerical aspects of digital data acquisition and signal processing, random data analysis, and system identification and diagnostic techniques used for mechanical systems. Singh.
Au Qtr. Offered even years. 2 1/2-hr cl. Prereq: 860 or permission of instructor.

873* State Space Methods for Dynamic Systems Analysis and Control G 3
Application of state-space methods in the analysis and synthesis of dynamic systems with emphasis on control applications. Srinivasan.
Wi Qtr. Offered even numbered academic years. 2 1/2 cl. Prereq: Math 568 or equiv and Mech Eng 571 or equiv, or permission of instructor. Not open to students with credit for Elec Eng 750.

874* Fault Diagnosis in Mechatronic Systems G 3
Fault detection and diagnosis in engineering systems based on dynamic models. Theory and case studies drawn from industrial application. Rizzoni.
Wi Qtr. Offered odd years. 2 1/2-hr cl. Prereq: 780 or Elec Eng 750 or Aero Eng 720 or permission of instructor.

882* Modeling of Dynamic Systems G 4
A study of theoretical, experimental, and computer methods for characterizing the dynamic behavior of complex systems. Hastings.
Sp Qtr. Offered even years. 2 1/2-hr cl, 1-2 hr lab. Prereq: 880 or permission of instructor.

883* Life-Cycle Design Optimization G 3
Life-cycle optimization of competitive products with emphasis on mathematical tools and real-world examples. Waldron.
Sp. Qtr. Offered odd years. 2 1/2-hr cl. Prereq: 661 or 882 or permission of instructor.
Medical Biochemistry

333 Hamilton Hall, 1645 Neil Avenue, 292-5451. Fax: 292-4118.

311 Fundamentals of Medical Biochemistry U 4
Basic structures and interactions of biomolecules in health and disease. Relevant organic chemistry included. Topics essential to human nutrition, dietetics, clinical chemistry, nursing, and medical education. Vaghy and Jurkowitz.
Au Qtr. 3 1 1/2-hr cl. Prereq: Chem 102 or 122.

312 Fundamentals of Medical Biochemistry and Molecular Biology U 4
Wi Qtr. 3 1 1/2-hr cl. Prereq: 311.

601† Medical Biochemistry I G 4
A three-quarter sequence of basic biochemistry exclusively for medical students in a joint graduate program.
Au Qtr. 5 cl. Prereq: Chem 252 and 255, or equivs., and enrollment in the College of Medicine.

602† Medical Biochemistry II G 4
Continuation of 601.
Wi Qtr. 5 cl. Prereq: 601.

603† Medical Biochemistry III G 4
Continuation of 602.
Sp Qtr. 5 cl. Prereq: 602.

641 Dental Biochemistry P 4
Chemistry and metabolism of carbohydrates, lipids, and proteins; digestion and absorption; elements of nutrition as they relate to dentistry, especially mineral and bone metabolism. Nuenke.
Au Qtr. 4 cl. Prereq: Chem 252.

642 Dental Biochemistry P 4
Continuation of 641. Nuenke.
Wi Qtr. 4 cl. Prereq: 641 and enrollment in College of Dentistry.

733 Human Genetics G 3
The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenesis. Burgaas.
Sp Qtr. 3 cl. and crpr time arr. Prereq: Mol Gen 500 or 501 or 600 or equiv. Not open to students with credit for Mol Gen 733 or Pathol 733. Cross-listed in Pathology and Mol Gen.

761 Advanced Biochemistry: Proteins U G 3
An advanced treatment of protein biochemistry.
Au Qtr. 3 cl. Prereq: Biochem 614 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Biochem 761, or Chem 761. Cross-listed in Biochemistry and Chemistry. Register under Chemistry.

762 Advanced Biochemistry: Enzymes U G 3
An advanced treatment of enzymology. Hille.
Au Qtr. 2 1/2-hr cl. Prereq: Biochem 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Biochem 705 or 762, or Chem 762. Cross-listed in Biochemistry and Chemistry.

763 Advanced Biochemistry: Membranes and Bioenergetics U G 2
An advanced treatment of membranes and bioenergetics.
Sp Qtr. 2 cl. Prereq: Biochem 615 and Chem 253, 255, and 521; or equivs. Not open to students with credit for 705, Biochem 705 or 763, or Chem 783. Cross-listed in Biochemistry and Chemistry. Register under Chemistry.

764 Advanced Biochemistry: Integration of Metabolism U G 3
Sp Qtr. 3 cl. Prereq: Chem 253, 255, 521 and Biochem 615 or equivs. Not open to students with credit for Biochem 764 or Chem 764. Cross-listed with Biochemistry and Chemistry.

765 Advanced Biochemistry: Physical Biochemistry U G 2
Diffusion, electrophoresis, sedimentation, light and x-ray scattering, x-ray and neutron diffraction, fluorescence, polarimetry, mass spectroscopy, and nuclear magnetic resonance.
Wi Qtr. 2 cl. Prereq: Chem 253, 255, 521 and Biochem 615 or equivs. Not open to students with credit for Biochem 765 or Chem 765. Cross-listed with Biochemistry and Chemistry. Register under Biochemistry.

766 Advanced Biochemistry: Nucleic Acid Chemistry and Structure U G 2
Reactions, synthesis, and conformations of nucleosides, nucleotides, oligonucleotides, and polynucleotides.
Sp Qtr. 3 cl. Prereq: Chem 253, 255, 521, and Biochem 615; or equivs. Not open to students with credit for Biochem 766 or Chem 766. Cross-listed with Biochemistry and Chemistry. Register under Biochemistry or Chemistry.

793 Individual Studies in Medical Biochemistry P 8, 16, or 24 G 2-3-5
Qualified students may avail themselves of the facilities of the department for conducting a minor investigation under the direction of a senior staff member.
Su, Au, Wi, Sp Qtrs. 1 or more months for professional credit; offered all months. Prereq: 612 or equiv with written permission of instructor. Repeateable to a maximum of 15 cr hrs for grad credit or to 24 cr hrs for professional credit. This course is graded S/U.

821* Physical Biochemistry of Proteins G 3
Protein structure (primary, secondary, tertiary, and quaternary) in the crystal state and in solution and their relationship to function. Allen.
Wi Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

822* Bioenergetics G 3
Flow of energy in biological systems; photosynthesis; oxidative phosphorylation; methods of studying mitochondria, chloroplasts, and other organelles. Pfleiffer.
Au Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

823* Molecular Control Mechanisms of Cell Proliferation G 3
Molecular mechanisms of cell periodicity under nuclear and cytoplasmic control. Emphasis will be directed towards understanding cyclins, nucleosome positioning, and cis and trans activity elements. Hali.
Wi Qtr. 2 1/2-hr cl. Prereq: 1 yr of grad biochem or permission of instructor.

824* Enzymology G 3
Selected topics in structure/function relationships, mechanisms of catalysis, kinetics, and metabolic interrelations of enzyme systems. Hille.
Sp Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

825* Neurochemistry G 3
Biochemistry and metabolism of the nervous system with discussion of synaptic transmission, memory theories, genetic defects, and associated diseases.
Sp Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

8261* Current Topics in Lipid Biochemistry G 3
Discussion of recent developments in one or more areas of lipid biochemistry, membranes, prostaglandins and peroxidation; topics to be announced.
Sp Qtr. 3 cl. Prereq: 1 yr of grad biochem or permission of instructor.

827* Biochemical Mechanisms of Carcinogenesis G 3
Defines the multi-stage model of cancer, signal transduction pathways used by tumor cells, genetics of cancer susceptibility and gene mutations in tumors. Hali.
Sp Qtr. 2 1/2-hr cl. Prereq: 1 yr of grad biochem or permission of instructor. Not open to students with credit for Med Micr 827. Cross-listed in Medical Microbiology and Immunology. Cross-listed in Medical Microbiology and Immunology.

831 Eukaryotic Genome: Structure and Expression G 3
Current research on the structure and expression of genes in higher eukaryotes. Burgas.
Au Qtr. 3 cl. Prereq: Biochem 702 or equiv. Not open to students with credit for Biochem 781. Repeateable to a maximum of 6 cr hrs. Cross-listed in Biochemistry and Molecular Genetics.
Medical Dietetics

School of Allied Medical Professions

516 School of Allied Medical Professions Building, 1583 Perry Street, 292-0635

201 Careers in Dietetics U 1
Roles, responsibilities, and educational requirements for a career in dietetics; current employment opportunities.
Wi Qtr. 1 cl.

420 Management in Medical Dietetics U 5
Application of management process to nutritional care of patients in the health care institution. Wolf.
Sp Qtr. 5 cl. Prereq: Humn Ntr 310, 314, 350, and 370; Alt Med 630.

422 Food Service Systems Practicum U 6
Applications of food service management in health care institutions. Wolf.

520 Nutrition and Human Metabolism I U 5
Application of medical nutrition therapy in prevention and disease states.
Wi Qtr. 4 cl. 1-3 hr lab. Prereq: 545 or Humn Ntr 610; Med Diet 546.

521 Nutrition and Human Metabolism II U 5
A continuation of 520.
Sp Qtr. 4 cl. 1-3 hr lab. Prereq: 520 or equiv.

530 Nutritional Care Process U 4
Sp Qtr. 3 cl. 1-3 hr lab. Prereq: 520 or Humn Ntr 612.01.

531 Nutritional Care Process II U 2
Evaluating assessment data for planning, implementing, evaluating and documenting nutritional care.
Sp Qtr. 1 cl. 3-hr lab. Prereq: 530.

545 Human Nutrition and Dietetics U 4
Integration of principles related to foods, nutrients, physiology, and biochemistry as they apply to nutritional care for the promotion of health and prevention of disease. Wardlaw.
Au Qtr. 4 cl. Prereq: Cham 162, Biology 101, and Humn Ntr 310 and 314.

546 Physical and Nutritional Assessment U 2
Methods of gathering, interpreting, and reporting nutritional assessment information.
Au Qtr. 1 hr cl, 3-hr lab. Prereq: Humn Ntr 310; EEOB 232 or Zoology 232 or equiv.

595 Seminar U 1-3
Conferences, group discussions, and presentations of selected topics.
Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor.

620 Management Applications in Dietetics U 3
Emphasis on managerial skills in food service or nutrition care units in health care organizations. Schiller.
Sp Qtr. 2 1½-hr cl. Prereq: 420 or equiv.

622 Human Resource Management in Dietetics U 3
Emphasis on human resource development in nutrition and food service environment.
Au Qtr. 3 cl. Prereq: 420 or equiv.

636 Nutrition Education and Counseling U 3
Principles of individual and group teaching and nutrition counseling as applied to responsibilities of the dietitian. Wessel.
Wi Qtr. 2 cl. 3-hr lab. Prereq: Junior standing in med. dietetics.

637 Health Promotion and Community Nutrition U 3
Study of nutrition and health risk appraisal, intervention strategies, and cost effectiveness of risk reduction for selected populations in public and private health programming.
2 1½-hr cl. Prereq: Humn Ntr 310.

637.01 Basic Concepts in Health Promotion and Community Nutrition
Au Qtr.

637.02 Advanced Concepts in Health Promotion and Community Nutrition
Sp Qtr.

638 Maternal and Pediatric Nutrition U 3
Physiological basis of nutritional needs for pregnancy, lactation, infancy, and childhood. Nutritional management of selected pediatric disorders in hospitalized and ambulatory infants and children. Wassel.
Sp Qtr. 2 1½-hr cl. Prereq: Humn Ntr 506 or permission of instructor.

639 Geriatric Nutrition U 3
Study of nutritional requirements, nutritional status assessment, and other selected issues in delivery of health care to older adults.
Sp Qtr. 3 cl. Prereq: Humn Ntr 506 or permission of instructor.

645 Advanced Medical Dietetics U 3
Study of medical nutrition therapy in trauma and hypermetabolic conditions. Emphasis on enteral and parenteral nutrition. Wardlaw.
Au Qtr. 2 1½-hr cl. Prereq: 521 or Humn Ntr 612.02, or permission of instructor.

646 Medical Nutrition Therapy Practicum U 10
Clinical experiences and post-clinical conferences with emphasis on assuming responsibility for patient nutrition care in the acute care, community, and out-patient settings.
Su, Au, Wi, Sp Qtrs. 1 cl. 32 hrs clinic. Prereq: Sr standing and permission of instructor. May require travel to off-campus clinical facility. This course is graded S/U.

655 Dietetics Practicum U 4
Clinical experience and post-clinical conferences with emphasis on observation and practice in pediatric, geriatric, community, and health promotion sites.
Su, Au, Wi, Sp Qtrs. 2 cl. 32 hrs clinic (4 wks). Prereq: Sr standing in med diet.

655.01 Long-Term/Subacute Nutrition Care Practicum
Not open to students with credit for 689.0.

655.02 Community Dietetics Practicum
Not open to students with credit for 689.0.

688 Medical Dietetics Advanced Practicum U 6
Supervised professional practice in various health care settings.
Su, Sp Qtrs. 1 cl. 40 hrs clinic (7 wks). Prereq: 422 and 646; permission of instructor. Not open to students with credit for 646.04. May require travel to off-campus clinical facility. These courses are graded S/U.

688.01 Advanced Practice in Subacute/Long-Term Care Dietetics

688.02 Advanced Practice in Community Dietetics

688.03 Advanced Practice in Medical Nutrition Therapy

693 Individual Studies in Nutrition or Dietetics U G 1-5
Problems in various phases of nutrition or medical dietetics not included in current course offerings.
Su, Au, Wi, Sp Qtrs. Prereq: Grad or sr standing in med diet and permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

695 Seminar U G 1-3
Conferences and group discussions of selected topics.
Su, Au, Wi, Sp Qtrs. 1 1½-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 or hrs. This course is graded S/U.

720 Management Applications in Dietetics G 3
Emphasis on leadership skills for nutrition and dietetics in health care settings.
Wi Qtr. 2 1½-hr cl. Prereq: Approved undergrad program in dietetics.

838* Maternal and Pediatric Nutrition
Physiology of pregnancy and lactation including women with special needs; physiology of the neonate, normal growth and development 0-12 months, and nutritional disorders of infancy. Wessel.
Prereq: Grad standing; 5 hrs physiology and biochemistry, Humn Ntr 310 or above, permission of instructor.

838.01 Physiological and Theoretical Bases for Maternal and Pediatric Needs G 3
Physiology of pregnancy and lactation including special needs; physiological changes in the neonate; normal growth and development during the first year; and nutritional disorders of the pediatric patient. Sp Qtr. 3 cl.
Medical Microbiology and Immunology

2078 Graves Hall, 333 West 10th Avenue, 292-5525

600 Evolution of Emerging Viruses U G 2
Biochemical, molecular, cellular, and epidemiological aspects of emerging viruses, with an emphasis on how each plays a role in virus evolution and emergence.
Sp Qtr. 1 hr-lab. Prereq: 1 yr of course work in the biological sciences recommended.

625 Medical Microbiology P G 5
Basic principles of Medical Microbiology and Immunology with direct application to infections of man.
Au Qtr. 40-hr lec.

626 Medical Microbiology P G 5
A more extensive and intensive application of basic principles of medical microbiology to infectious diseases.
Wi Qtr. 9-hr lec., 25-hr discussion. Prereq: 625 or permission of instructor.

693 Individual Studies G 1-5
Individual minor investigation in some medical microbiological or immunological field of choice.
Su, Au, Wi, Sp Qtr. Arr. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Group Studies on special topics in Microbiology and Immunology.

701 Cellular and Molecular Immunology U G 5
Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms. Lab use.
Au Qtr. 5 cl. Prereq: Biochem 613, Mol Gen 501, or equiv. Not open to students with credit for Microbiol 701. Cross-listed in Microbiology.

747** Molecular Biology of Eucaryotic Microbial Pathogens G 3
Antigenic variation, composition of non-mammalian surfaces, responses to environmental signals, mechanisms leading to damage and survival within the host; emphasis on yeast and parasitic protozoa.
Sp Qtr. 2 1/2-hr cl. Prereq: Biochem 702 Sundstrom

754 Fundamentals of Molecular Virology P G 5
Primary emphasis is on molecular biology of animal/human viruses. Covers the strategy of virus replication with special emphasis on the molecular biology of genomic replication and virus gene expression.
Sp Qtr. 3 1-hr lab. Prereq: Mol Gen 701, Biochem 702 or equiv. Parris

757** Diagnostic and Clinical Virology P G 5
Laboratory procedures used for the diagnosis of human viral infections.
Hughes.
Sp Qtr. 1 cl, 33-hr lab. Prereq: Enrollment in College of Medicine or written permission of instructor.

764** Bacterial Viruses P G 3
Molecular biological study of bacteriophages emphasizing virulent and lysogenic phage host systems.
Sp Qtr. 2 1/2-hr cl. Prereq: Mol Gen 701, Biochem 702, or permission of instructor.

793 Individual Studies in Medical Microbiology
Prereq: Enrollment in College of Medicine or permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. These courses are graded S/U.

793.06 Problems in Medical Microbiology P 6, 12, or 18 G 3-16
1, 2, 3, or 4 months; offered all months (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Repeatable to a maximum of 24 cr hrs for professional credit.

793.07 Diagnostic and Clinical Microbiology P G 6-18
Experience in isolation and identification of micro-organisms from clinical specimens.
1, 2, 3, or 4 months (full time—prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: 626 and permission of instructor. Repeatable to a maximum of 24 cr hrs.

794 Group Studies P G Arr
One month, offered all months (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Written permission of instructor. When registration is for 3 professional cr hrs, an additional 3 cr hr professional course must be taken. This course is graded S/U.

801** Selected Topics in Advanced Immunology G 3
Specific topics will vary from year to year in the general areas of immunocommunity, immune regulation, and cellular immunity.
Wi Qtr. 3 cl. Prereq: 701 or equiv course in basic immunology or permission of instructor. Repeatable to a maximum of 9 cr hrs. Intended for advanced grad students, medical residents, and postdoctoral fellows.

804** Instrumentation and Techniques in Medical Microbiology G 5
Theory and application of techniques used to purify and characterize nucleic acids, lipids, and proteins; theory and operation of equipment and instruments used in parims, Pollack, and Williams.
Wi Qtr. 2 2-hr cl, 12 lab hrs. Prereq: 625, 626; and MBiochem 611, 612, or equiv.; and written permission of instructor.

814 Current Topics in Medical Microbiology G 1
Au, Wi, Sp Qtrs. Prereq: Med micr grad standing or permission of instructor. Repeatable with permission of instructor to a maximum of 15 cr hrs. This course is graded S/U.

827** Biochemical Mechanisms of Carcinogenesis G 3
Defines the multi-stage model of cancer signal transduction pathways used by tumor cells, genetics of cancer susceptibility and gene mutations in tumors.
Sp Qtr. 2 1/2-hr cl. Prereq: 1 yr of grad biochem or permission of instructor. Not open to students with credit for MBiochem 827. Cross-listed in Medical Biochemistry.

833** Current Immunological Techniques G 4
Current techniques in cellular and humoral immunology as applicable in research conducted by students. Laffuse.
Wi Qtr. 2 4-hr labs. Prereq: 701 or equiv course in basic immunology. Not open to students with credit for Microbiol 833. Cross-listed in Microbiology.

841 Viral Pathogenesis and Oncogenesis G 5
Cellular, immunological and molecular mechanisms involved with virus pathogenesis in animals/humans. Williams.
Au Qtr. 5 cl. Prereq: 701 or equiv and 754. Not open to students with credit for Vet Bio 841 or Vet Path 841. Cross-listed in Veterinary Biosciences.
Medical Record Administration

(See Health Information Management and Systems)

Medical Technology

School of Allied Medical Professions
535 School of Allied Medical Professions Building, 1583 Perry Street, 292-7303

For related courses see Pathology.

480 Fundamental Techniques in Clinical Laboratory Science
Application of theory and fundamental clinical laboratory techniques with emphasis on phlebotomy, basic instrumentation, laboratory calculations, specimen processing and professional issues.
Au Qtr. Prereq: Admission to Med Tech or permission of instructor.

480.01 Lecture U 2
Theory and applications of fundamental clinical laboratory techniques, principles, basic spectrophotometry, laboratory calculations, specimen processing and professional issues. 2 cl.

480.02 Laboratory U 2
Laboratory applications of basic spectrophotometry, phlebotomy, specimen processing. 2 3-hr labs.

500 Clinical Laboratory Microbiology U 6
Basic theory and application of clinical laboratory techniques used to identify microorganisms pathogenic to humans.
Au Qtr. 3 cl, 3 3-hr labs. Prereq: Admission to Division of Med Tech or permission of instructor.

510 Clinical Laboratory Hematology
Basic theory and application of clinical laboratory techniques used to evaluate the formed elements of blood and the hematocrit mechanism.
Wi Qtr. Prereq: 480 or permission of instructor.

510.01 Lecture U 3
Wi Qtr. 2 1/2-hr cl. Concur: 510.02.

510.02 Laboratory U 2
Wi Qtr. 2 3-hr labs. Concur: 510.01.

515 Advanced Clinical Laboratory Hematology
Advanced theory and application of clinical laboratory techniques used to evaluate the formed elements of the blood and hematocrit mechanism.
Au Qtr. Prereq: 480, 510.01, 510.02, or permission of instructor.

515.01 Lecture U 3
2 1/2-hr cl. Concur: 515.02.

515.02 Laboratory U 2
2 3-hr labs. Concur: 515.01.

525 Advanced Clinical Laboratory Microbiology U 4
Theory and application of clinical laboratory techniques used to identify fungi, parasites and viruses pathogenic to humans.
Wi Qtr. 2 cl, 2 3-hr labs. Prereq: 480.01, 480.02, 500, 530.01, 530.02, or permission of instructor.
635.01 Lecture U G 2
2 cl. Concur: 635.02.
635.02 Laboratory U G 2
2 3-hr labs. Concur: 635.01.

645 Advanced Laboratory Operations and Techniques U 4
Applications of theory and quality control, method evaluation and selection, and advanced diagnostic techniques with an emphasis on instrumentation, automation, and problem-solving.
Wi Qtr: 2 1-hr lec, 1 3-hr lab. Prereq: 480, 545 or permission of instructor.

Medicine, College of

(See Medicine and Public Health, College of)

Medicine and Public Health, College of

209 Melling Hall, 370 West 9th Avenue, 292-5674

661 MED I: Medical Humanities and Behavioral Sciences P 4 or B
A multidisciplinary study of human behavior, the art of medicine, ethics, and the relationships of the physician with patient, self, family, and society.
Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Medicine. Repeatable to a maximum of 24 cr hrs. Registered medical students only. This course is graded S/U.

662 MED I: Basic Medical Sciences P 4, 5, 6, 8, 16, 20, or 24
Study of the whole man in an unified, patient-oriented interdisciplinary manner; study of various aspects of normal life processes by means of history taking, physical examinations, and diagnostic techniques in preparation for subsequent study of the ill patient, disease entities, and methods of treatment.
Au, Wi, Sp Qtrs. Concur: 661. Repeatable to a maximum of 180 cr hrs. This course is graded S/U.

663 MED II: Pathophysiology and Manifestation of Disease P 4, 5, 6, 8, 16, or 24
A multidisciplinary presentation of disease mechanisms, correlation of abnormalities of structure and function with cardinal symptoms and manifestations of disease; discussion of differential diagnosis of the most common patient complaints to reinforce the concepts and mechanisms of disease processes.
Au, Wi, Sp Qtrs. Prereq: 662. Repeatable to a maximum of 216 cr hrs. This course is graded S/U.

664 MED III and IV: Clinical Medicine P 4, 5, 6, 8, 16, or 24
Didactic and clinical instruction in family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery; experience in outpatient, community, and inpatient services.
Su, Au, Wi, Sp Qtrs. Prereq: 663. Repeatable to a maximum of 248 cr hrs. Must repeat 152 cr hrs. This course is graded S/U.

669 Practicum in Medicine P 0
Applied experiences in medicine for 3rd and 4th year medical students rotating through clinical disciplines, externship experiences for medical students chosen for competitive programs at various agencies for field experience.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Med students with permission of Dean’s Office. Repeatable to a maximum of 4 quarters. This course is graded S/U.

693 Individual Studies P 4, 5, 8, 16, or 24
Special studies in introduction to medicine; nature of life processes; the pathophysiology and manifestation of disease; and supervised individualized program.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of Instructor. Limited to students working toward the MD degree. Repeatable to a maximum of 96 cr hrs. This course is graded S/U.

700 Interprofessional Education
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.
3 cl. Repeatable to a maximum of 9 cr hrs. These courses are graded S/U. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

700.01 Interprofessional Care U P G 3
Treatment of the whole person through the analysis of the interrelated problems of actual cases.
Wi Qtr.

700.02 Changing Societal Values U P G 3
Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/client/patients.
Sp Qtr.

700.03 Ethical Issues U P G 3
Ethical issues of concern to the professions and arising out of advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.
Au Qtr.

700.04 Interprofessional Practicum in Clinical Settings P 3, 5
Interprofessional teamwork in clinical settings.
Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

700.07 Interprofessional Approaches to Child Abuse and Neglect G 3
Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.
Au Qtr. Prereq: Permission of instructor.

797 Interdepartmental Seminar P G 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. This course is graded S/U.

645 Advanced Laboratory Operations and Techniques U 4
Applications of theory and quality control, method evaluation and selection, and advanced diagnostic techniques with an emphasis on instrumentation, automation, and problem-solving.
Wi Qtr: 2 1-hr lec, 1 3-hr lab. Prereq: 480, 545 or permission of instructor.

Medieval and Renaissance Studies

256 Cunz Hall, 1841 Millikin Road, 292-7495

210 Court of Charlemagne U 5
The Carolingian Renaissance: a unified interpretation of a crucial period in the transition of Europe from the classical age to the early Middle Ages.
3 cl, 2 hr arr. GEC arts and humanities courses and ideas course.

212 Culture of a City-State in the Renaissance U 5
The study of an Italian Renaissance city-state with attention to its political, social, and economic structure; its intellectual, religious, and artistic activity.
3 cl, 2 hr arr. GEC arts and humanities courses and ideas course.

213 Medieval Moscow U 5
The diversity of medieval Russian culture as represented by Moscow: religion, society, politics, art, and architecture.
4 cl, 1 hr arr. GEC arts and humanities courses and ideas course.

214 Golden Age of Islamic Civilization U 5
The Baghdad Caliphate of Harun ar-Rashid from 786 to 861 A.D.
4 cl, 1 hr arr. GEC arts and humanities courses and ideas course.

215 Gothic Paris: 1100-1300 U 5
Medieval Paris, its art, music, history, theatre, literature, and important individuals.
3 cl, 2 hrs arr. GEC arts and humanities courses and ideas course.

204 Group Studies U 3-5
Topic varies; special subjects not covered by regular courses.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 20 cr hrs or four offerings.

504 The Arthurian Legends U 5
The medieval tales of King Arthur’s court and the Knights of the Round Table in history, myth, literature, art, and music.
Prereq: 10 or hrs in literature. Not open to students with credit for Comp. 504 or 515.

610 Manuscript Studies U G 5
An examination of the development of Latin book production from late antiquity to the Renaissance in the cultural context of the Middle Ages.
Sp Qtr. 2 2-hr cl. Prereq: Jr, sr, or grad standing.

692 Workshop U G 1-8
Arr. Prereq: Varies with the topic offered. Repeatable to a maximum of 15 cr hrs.

693 Individual Studies U 1-5
Students may register for individual directed study under this number for work not normally offered in courses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Open only to majors in medieval. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
694 Group Studies U G 2-5
Interdisciplinary group studies of selected topics in medieval and Renaissance culture and civilization.
Su, Au, Wi, Sp Qtrs. Prereq. 10 cr hrs in medieval at the 200 level. Repeatable to a maximum of 15 cr hrs.

595 Advanced Seminar in Medieval and Renaissance Studies U G 5
A seminar in interdisciplinary research and analysis providing experience in presenting ideas in oral and written form.
Sp Qtrs. 2-2 hr cl. Prereq: Jr, sr, or grad standing; or permission of instructor. Repeatable to a maximum of 15 cr hrs. GEC third writing course.

H783 Honors Research U 3-5
A program of study will be arranged for each student, with individual conferences, reports, and Honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in the student's major area of study and an average of B in the remaining; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the BA degree with distinction in medieval. Failure to secure a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

792 Interdepartmental Studies in the Humanities U G 5
Two or more departments may collaborate in presenting colloquia on studies of mutual interest; topics to be announced.
Au, Wi, Sp Qtrs. 1 or 2-2 hr cl. Repeatable to a maximum of 15 cr hrs.

899 Interdepartmental Seminar in the Humanities G 5
Two or more departments may collaborate in presenting seminars on subjects of mutual interest; topics to be announced.
Au, Wi, Sp Qtrs. 1 or 2-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Microbiology

378 Biological Sciences Building, 484 West 12th Avenue, Tel: 292-2301; Fax: 292-8120
Web page: http://www.biosci.ohio-state.edu/microbio/microbio.html

394 Group Studies U 1-5
Study of selected topics in microbial and cellular biology.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

301 The Biology of Pollution U 2
A general consideration of the interactions of environmental pollutants and biological systems. Tuuvinen.
Au Qtr. 2 cl. Credit does not count toward a major in microbiol. NS Admis Cond course.

509 Basic and Practical Microbiology U G 5
Provides an understanding of microorganisms and their interaction with the human experience. Ackerman-Brown, Baker, and Wrobel-Boerner.
Su, Au, Wi, Sp Qtrs. 3 cl. 2-2 hr labs. Prereq: Biology 101 or 110 or 113 or H115 or Zoology 201. GEC bio sci course. NS Admis Cond course.

520 General Microbiology I U G 6
Fundamental principles of microbiology and the characteristics of microorganisms with emphasis on their structure, molecular biology, growth and classification. Conway, Hensin, and Wrobel-Boerner.
Au Qtr. 3 cl, 2-2 hr labs. Prereq: Biology 114 or H116 and Chem 251. May not be taken concur with 509. GEC third writing course.

521 General Microbiology II U G 6
Continuation of 520; basic principles of microbiology with emphasis on physiology, ecology, and applied pathogenic microbiology. Krzycki and Wrobel-Boerner.
Wi Qtr. 3 cl, 2 hr labs. Prereq: 520 and Chem 252. May not be taken concur with 520. GEC third writing course.

522 Immunobiology U G 5
Cellular and molecular properties of the immune system. Mortensen.
Sp Qtrs. 3 cl, 2-2 hr labs, 1 rec. Prereq: 520 for majors; 509 for nonmajors.

524 Microbial Disease
Sp Qtrs. Not open to students with credit for 724.

524.01 Mechanisms of Microbial Disease U G 4
Overview of microbe-host interactions with an emphasis on pathogenic mechanisms of microorganisms; the influence of the eukaryotic agent, route of contact, host species, and the environment. Baker.
2 2-2 hr. Prereq: 522.

524.02 Microbial Disease Laboratory U G 2
2 2-2 hr labs. Prereq: 522 and concur: 524.01.

581 Microbial Genetics U G 5
Structure, maintenance, expression, and exchange of genetic material in microbial cells. Daniels.
Au Qtr. 3 cl, 1-1 hr. Prereq: 520 or Mol Gen 506. Not open to students with credit for 880.

592 Independent Study of Practical Microbiology U 2
Students will work with course instructor, teaching assistants and associates to examine preparation and presentation of material, and gain experience working with students and faculty. Baker.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr microbic major and permission of coordinating advisor. This course is graded SU.

General Prerequisites for Courses Numbered 600 and 700
Unless otherwise indicated the prerequisites for 600- and 700-level courses are courses in organic chemistry and 10 hours of biological sciences.

6031 Introduction to Biophysics U G 5
Introductory course in the approach to biological phenomena from conceptual viewpoint of physical sciences; molecular to organismic levels of biological hierarchical structure. Cassim.
Au Qtr. 5 cl. Prereq: Math 152, Chem 252, 10 c hrs in biological sciences, Physics 113, or equiv with permission of instructor.

610 Bioinformatics and Molecular Microbiology U G 5
Application of computational tools to the analysis of genomes and their gene products. Daniels.
Sp Qtrs. 2 2-1 hr labs. Prereq: 521 or Mol Gen 506, and Biochem 511; or permission of instructor.

6291 Protozoa and Immunity U G 5
Cell biology and immunology of parasitism in the context of pathogenic protozoa of Homo sapiens; lab: fresh and preserved materials; immunity of bloodstream trypanosomes; literature research project.
Sp Qtrs. 3 cl, 1-1 hr lab. Prereq: 522 or permission of instructor.

6321 Cellular Aspects of the Immune Response

632.01† Lecture U G 3
Cellular and molecular mechanisms of the immune response; characterization of cell products elaborated subsequent to antigenic stimulation; significance of these products in immunologic response.
Au Qtr. 3 cl. Prereq: 522 or equiv with permission of instructor.

632.02† Laboratory U G 3
Laboratory techniques in cellular immunology, including an assessment of lymphocyte and macrophage function flow cytometry, production of monoclonal antibody, and biological response modifiers.
Au Qtr. 2 2-1 hr labs, 1-1 hr rec. Prereq or concur: 632.01 or equiv, and permission of instructor.

6341 Water Microbiology U G 3
A basic study of the relationships and influence of aquatic environments on microorganisms and the effect of microbial metabolic processes on the quality of water. Tuuvinen.
Wi Qtr. 3 cl. Prereq: 521.

636 Food Microbiology U G 5
Microorganisms in relation to the production, processing and handling of food with emphasis on sanitation and public health problems. Yousef.
Au, Sp Qtrs. 3 cl, 2-2 hr labs, 1 discussion. Prereq: 509 or 521. Not open to students with credit for 60 Sc/T 622 or 636. Cross-listed in Food Science and Technology.

6411 Introduction to Quantum Biology U G 5
An introduction to applications of elementary quantum mechanics to problems in biology; stress on conceptual rather than mathematical aspects. Cassim.
Wi Qtr. 5 cl. Prereq: Chem 123, Math 152, Physics 113, and 10 cr hrs in biological sciences.

649 Introductory Virology U G 5
Basic principles of virology with discussion of structure; virus-host cell interactions, detection, production and control animal bacterial, insect and plant viruses used as examples. Galloway and Williams.
Wi Qtr. 2 2-1 hr cl, 1 hr rec. Prereq: 520.

6551 Animal Cell Culture Techniques U G 5
Basic principles of tissue culture and organ culture; application of these procedures to basic and applied research in immunology and virology.
Au Qtr. 2-2 hr labs, 1-2 hr rec. Prereq: 522 or equiv, with permission of the instructor.
661 General Microbial Physiology U G 5
Principles of microbial growth, metabolism, of microbial structure and function, and regulation of microbial metabolism. Conway.
Wi Qtr. 5 cl. Prereq: 521 and Biochem 511. GEC third writing course.

664* Microbial Ecology U G 3
A study of microbial functions, interactions and diversity as influenced by biological, chemical and physical factors in the environment. Tuovinen.
Wi Qtr. 3 1-hr cl. Prereq: 521. Not open to students with credit for 666.

665* Environmental Microbiology U G 3
The role of microorganisms and underlying biological principles in elemental cycles and degradation of natural and man-made compounds. Tuovinen.

680 Advanced Microbial Genetics U G 3
Molecular mechanisms of gene regulation in prokaryotes; mechanisms of gene transfer and recombination. Henkin.
Sp Qtr. 3 cl. Prereq: 581, or Mol Gen 501 or 605, or equiv.

692 Workshop U G 1-6
Intensive study of a topic in microbiology; the format will depend upon the topic.
Arr. Prereq: Written permission of workshop director. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

693 Individual Studies U G 1-5
Outlined by instructor to meet individual student's needs.
Su, Au, Wi, Sp Qtr s. Prereq: Microbiol 4th yr major or grad standing and permission of instructor. No more than 5 cr hrs can be counted toward an undergrad microbiol major. Not open to Plan B MS students. Repeatable only by undergrads to a maximum of 15 cr hrs. Not repeatable by grad students. This course is graded S/U.

694 Group Studies U G 2-5
Group work on special topics in microbiological biology.
Su, Au, Wi, Sp Qtr s. Prereq: Permission of Instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtr s. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

701 Cellular and Molecular Immunology U G 5
Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms. Zwillig and staff.
Au Qtr. 5 cl. Prereq: Biochem 613, Mol Gen 501 or equiv. Not open to students with credit for Med Micr 701. Cross-listed in Medical Microbiology and Immunology.

720 Molecular Basis for Microbial Biodiversity U G 4
Introduction to the diversity of organisms found in the microbial world and molecular mechanisms by which select organisms adapt or modify the environment. Tabita and staff.
Au Qtr. 2 2-hr cl. Prereq: 521, Biochem 511, and Mol Gen 500; or equivs; or permission of instructor.

723** Molecular Immunology U G 3
Molecular biological properties of antibodies, T-cell receptors, cytokines, complement and MHC.
Mortensen.

723.01* Lecture
Wi Qtr. 3 cl. Prereq: 522 or equiv with written permission of instructor.

723.02* Laboratory
Wi Qtr. 2 4-hr labs. Prereq or concur: 723.01.

7241* Molecular Biology of Bacterial Pathogens U P G 5
In depth presentation and discussion of the molecular biology and genetics of bacterial pathogens, emphasizing current research in the field. Galloway.
Sp Qtr. 2 2-hr lab, 1-hr rec. Prereq: Grad standing, advanced undergrads must have permission of instructor.

7301* Immunology of Parasitic Infections U G 2
A discussion of the role of immunity in the production, course, pathogenicity, diagnosis, and control of parasitic infections of humans and/or domestic animals. Barriga and staff.
Au Qtr. 2 cl. Prereq: Basic courses in parasitology and immunology; permission of instructor. Repeatable to a maximum of 4 cr hrs. Content varies according to major interests of class. Protozoa and arthropods taught in odd yr; helminths in even yrs. Not open to students with credit for Vet Path 730. Cross-listed in Veterinary Pathobiology.

736 Advanced Food Microbiology G 3
Microbiological aspects of food preservation, detection of microbiological contaminants, hazards, and microorganisms of public health significance. Richter.
Wi Qtr. 3 cl. Prereq: 636 or Fd Sc&Tc 622 and Chem 123. Not open to students with credit for Fd Sc&Tc 701 or 736. Cross-listed in Food Science and Technology.

7501* Fermentation Biotechnology U G 5
Fundamentals of modern fermentation technology and industrial microbiology; with emphasis on product formation, culturing techniques and computer-controlled fermentation.
Sp Qtr. 3 cl, 2 3-hr labs. Prereq: 521; or equivs with permission of the instructor.

760* Advanced Bacterial Physiology U G 3
Specialized metabolic pathways, regulation of control mechanisms, and bacterial biochemistry. Krzycki and staff.
Sp Qtr. 3 cl. Prereq: 681 or permission of instructor.

799 Microbiology Colloquium U G 1
Mortensen.
Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

8321* Advanced Cellular Immunology U G 3
Student presentations of primary literature with emphasis on genetic, biochemical, and cellular aspects of signal transduction by receptors of hematopoietic cells.
Wi Qtr. 3 cl. Prereq: 701 or permission of instructor.

833* Current Immunological Techniques G 4
Current techniques in cellular and humoral immunity as applicable in research conducted by students.
Wi Qtr. 2 4-hr lab. Prereq: 701 or Med Micr 701 or equiv course in basic immunology. Not open to students with credit for Med Micr 833. Cross-listed in Medical Microbiology and Immunology.

880 Seminar in Microbiology G 1-3
Galloway.
Au, Wi, Sp Qtrs. Repeatable. This course is graded S/U.

890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2
Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.
Au, Wi, Sp Qtrs. 1 1-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, and Plant Biology. This course is graded S/U.

893 Individual Studies G 3-5
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in Plan B master's program and written permission of instructor. Not open to Plan A MS candidates or PhD candidates. Repeatable to a maximum of 10 cr hrs. Outlined by instructor to meet individual student's needs for Plan B library research. This course is graded S/U.

894 Group Studies G 2-5
Group work on special topics in microbial or cellular biology.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

999 Research in Microbiology G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Military Science

Army ROTC

253 Converse Hall, 2121 Tuttle Park Place, 922-6709
The Department of Military Science offers instruction to all Ohio State students in basic soldier skills, leadership, organization of the Army and military history. Additionally, those individuals meeting the requirements as outlined in the Department of Defense may choose to receive a commission in the United States Army, the United States Army Reserve, or the Army National Guard.

Military Science 100- and 200-level courses are open to all students. Military Science 300- and 400-level courses are open to those students who meet the prerequisites as indicated below or receive the permission of the professor of military science. Students taking military science courses for credit and not seeking a commission will attend the classroom portion only. The Department of Military Science offers two programs of instruction leading to a commission as a Second Lieutenant.

The four-year program consists of a basic course and an advanced course. The basic course requires successful completion of Military Science 100- and 200-level courses during the freshman and sophomore years. The advanced course requires successful completion of Military Science 300- and 400-level courses during the junior and senior years. The courses are three credit hours for the basic program and four credit hours for the advanced program with three hours of classroom instruction. There are approximately 200 hours of leadership laboratory, in addition to the classroom instruction each quarter. Additionally, all advanced course students completing training at a field training center in the U.S. Army, must attend a six-week summer training camp between their junior and senior years.

No military obligation is incurred for the first two years of the program. Following completion of the basic course, students may receive an advanced course of instruction. Those qualified students wishing to receive a commission must sign an ROTC contract which obligates the student to complete the program of instruction and accept a commission in the U.S. Army, U.S. Army Reserve, or the Army National Guard. Contracted students receive a subsistence allowance of $150 for each academic month of enrollment, not to exceed $1,500 per year.

The two-year program is offered for students wishing to receive a commission who transfer from colleges that did not offer ROTC. Those students, or students whose academic course load did not permit them to take military science courses during their first two years. Students may qualify for the two-year program in one of several ways. The first is by attending Army ROTC Basic Camp, Camp Challenge. Upon successful completion of camp, the student may enter the advanced course of instruction. Attending basic camp does not require the student to continue in the program nor does it incur any military obligation. The second is to receive credit for honorably prior military science, as determined by the professor of military science. Additionally, a student may receive credit for two years or more of Junior ROTC at the high school level. After receiving credit for the basic course, the student proceeds with the advanced course as previously described.

102 Military Survival Skills for the Small Unit Leader U 3

An introduction to combat zone survival techniques; use of military survival kits as well as survival under varying climatic and battlefield conditions; includes a one-day field training exercise.

Wi Qtr. 2 1-hr cl, 1 2-hr lab.

103 Land Navigation and Map Reading U 3

An introduction to basic military map reading and land navigation skills; conventional map reading skills as well as survival navigation skills for the hiker will be examined.

Sp Qtr. 2 1-hr cl, 1 2-hr leadership lab.

111 Introduction to the US Army U 3

An introduction to the US Army and the concept of leadership. Includes "whole life" skills applicable to school, business, or the Army.

Au, Wi, Sp Qtrs. 2 1-hr cl, 1 2-hr lab.

212 Small Unit Actions U 3

Study of selected small unit actions to define leadership in high stress environments, effects of battlefield management.

Wi Qtr. 2 1-hr cl, 1 2-hr leadership lab. 1 required range exercise.

213 Small Unit Leader U 3

Instruction on advanced land navigation techniques, and tactics at the individual, squad, and platoon level; designed to prepare the student for the AROTC Advanced Program.

Au Qtr. 2 1-hr cl, 1 2-hr leadership lab. 1 2-day land navigation exercise.

221 Basic Tactics and Soldier Skills U 3

An introduction to the organization, mission, characteristics, capabilities, and tactics of the infantry squad, platoon, company, and battalion.

Sp Qtr. 2 1-hr cl, 1 2-hr lab.

311 Contemporary Military Subjects U 4

An overview of national defense policy, military history, organization, roles, missions, and branches of the U.S. Army, basic weaponry, and land navigation; designed as an orientation to the AROTC Advanced Program.

Wi Qtr. 3 cl, 1 2-hr cl, 1 2-hr leadership lab, 1 3-hr physical training lab, 1 2-day field training exercise. Prereq: MJS 312 or permission of the professor of military science.

312 Small Unit Tactics U 4

Study of the organization, mission, characteristics, capabilities and tactics of the infantry squad, platoon, company, and battalion; troop leading procedures, operations orders, offensive, defense, retrograde operations, and patrolling.

Au Qtr. 3 1-hr cl, 1 2-hr leadership lab, 1 3-hr physical training lab, 1 4-day field training exercise. Prereq: Basic AROTC program or equiv.

313 Military Leadership and Skills U 4

A study of leadership to include trait theory, motivation theory, and contemporary leadership models; instruction on oral and written communication techniques, and basic military skill qualification subjects.

Sp Qtr. 3 1-hr cl, 1 2-hr leadership lab, 1 3-hr physical training lab, 1 4-day field training exercise. Prereq: 311 or permission of professor of military science.

401 Military Operations, Management, and Ethics U 4

Study of army management systems to include equipment management and property accountability; military professionalism and ethics (ethical decision-making process).

Au Qtr. 3 1-hr cl, 1 2-hr leadership lab, 1 3-hr physical training lab, 1 2-day field training exercise. Prereq: 311, 312, 313 or permission of professor of military science.

402 Administration and Operations U 4

Study of army administration, including military publications and personnel actions; army correspondence, including military writing style; small unit operations with concentration on platoon operations.

Wi Qtr. 3 1-hr cl, 1 2-hr leadership lab, 1 3-hr physical training lab, 1 4-day field training exercise. Prereq: 401 or permission of professor of military science.

411 Contemporary Military Subjects U 4

A study of contemporary military subjects, including contemporary military strategy, military operations, and military ethics.

Wi Qtr. 3 1-hr cl, 1 2-hr leadership lab, 1 3-hr physical training lab, 1 4-day field training exercise. Prereq: 401 or permission of professor of military science.

Modern Greek

414 University Hall, 230 North Oval Mall, 922-7744

101 Elementary Modern Greek I U 5

Elements of Modern Greek: sound and writing systems; phonology; morphology of noun and verb; written and oral practice.

Au Qtr. 5 cl. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of instructor. This course is available for EM credit. GEC for lang course. FL Admin's Cond course.

102 Elementary Modern Greek II U 5

Further study of morphology and syntax with reading of longer texts; extensive written and oral practice.

Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL Admin's Cond course.

103 Intermediate Modern Greek I U 5

Grammatical review, with attention to variations of morphology and syntax between Demotic and Katharevousa styles; prese reading assignments and written and oral practice.

Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

104 Intermediate Modern Greek II U 5

Assigned reading from Demotic and Katharevousa sources, including newspaper and periodical articles.

Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

241 Culture of Contemporary Greece U 5

A general survey of socio-cultural trends and issues in modern Greece through close analysis of literature and the other arts.

Wi, Sp Qtrs. 5 cl. Not open to students with credit for 341. GEC arts and hums cultures and ideas course.
Molecular Genetics 265

998 Research in Modern Greek G 1-10
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

Molecular, Cellular, and Developmental Biology

260 Rightmire Hall, 1060 Carmack Road, 282-2804

693 Individual Studies G 2-15
Individual research and problem solving in the field of molecular, cellular, and developmental biology.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 35 cr hrs. This course is graded S/U.

697 Study at a Foreign Institution G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

800 Seminar in Molecular, Cellular, and Developmental Biology G 1
Seminars will be presented by faculty, graduate students, and outside speakers.
Su, Au, Wi, Sp Qtrs. 1 cr. Prereq: Grad standing. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2
Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology.
Au, Wi, Sp Qtrs. 1-2 hr cr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics and Plant Biology.

999 Research in Molecular, Cellular, and Developmental Biology G Arr
Research for thesis and dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Molecular Genetics

984 Biological Sciences Building, 464 West 12th Avenue, 292-8084

140 Introduction to Genetics U 5
An introductory course emphasizing applied aspects of genetics, primarily for students outside the College of Biological Sciences.
Sp Qtrs. 5 cr. Prereq: Biology 101 or 113 or H115. Not open to students with credit for 170 or 201. NS Admis Cond course.

500 General Genetics U 5
The principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, and the genetics and evolution of populations.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: Biology 101 or 113 or H115, plus 5 additional cr hrs in biological sciences, and Chem 232 or 252.

503 Tutorial in Molecular Genetics U 2
Practice in searching, reading, and analyzing literature in molecular genetics, and in written and oral presentation.
Su, Au, Wi, Sp Qtrs. 2 cr. Prereq: 502. Open to mol gen majors only or by permission of instructor. GEC third writing course.

601 Eukaryotic Molecular Genetics Laboratory G 5
Current laboratory techniques used in the genetic and molecular analyses of Saccharomyces cerevisiae and Drosophila.
Wi Qtrs. 1 cr, 3-3 hr labs. Prereq: Biochem 511 or permission of instructor.

602 Eukaryotic Cell and Developmental Biology Laboratory G 5
Laboratory course emphasizing recent advances in techniques and methods central to cell biology and developmental biology of eukaryotes.
Sp Qtrs. 2 cr, 2-4 hr labs. Prereq: Biochem 511 or permission of instructor.

605 Molecular Genetics I U 3
Hereditary information as sequence information; DNA replication, transcription, and translation; analysis and manipulation of genes at the molecular level; asexual and sexual reproduction in eukaryotes.
Wi Qtr. 3-1 hr cr. Prereq: Biochem 511 and Math 152. Not open to students with credit for 500.
606 Molecular Genetics II U G 3
Sexual reproduction in prokaryotes, viruses and organelles; molecular mechanisms of DNA replication, repair, mutation, recombination, and expression; genome structure; molecular evolution.
Sp Qtr. 3-1 hr cl. Prereq: 605. Not open to students with credit for 500.

607 Cell Biology U G 3
Analysis of the structure and function of cells and their components stressing molecular genetic and biochemical approaches.
Au Qtr. 3-1 hr cl. Prereq: 500 or 506. Not open to students with credit for 502.

608 Genes and Development U G 3
Analysis of development using modern genetic approaches.
W I Qtr. 3-1 hr cl. Prereq: 500 or 606. Not open to students with credit for 502.

622 Plant Genetics and Molecular Biology U G 5
An in-depth survey of classical and molecular genetic systems in plants with emphasis on current research topics.
Sp Qtr. 5 cl. Prereq: 500 or 501 or 506, and Biochem 511 or permission of instructor. Not open to students with credit for 632 or Plant Bio 622. Cross-listed in Plant Biology.

640 The Genetical Basis of Evolution U G 5
The modern theory of evolution and its underlying genetic basis.
Sp Qtr. 5 cl. Prereq: 500.

650 Analysis and Interpretation of Biological Data I U G 5
Methods of analyzing biological data including: sampling, descriptive statistics, distributions, group comparisons, statistical inference, one-way and nested analysis of variance and linear regression and correlation. Kornacker.
Au, Wi, Sp Qtrs. 1 2-hr lab, 4 cl (optional after 1st wk), 3-5 hrs comp-assisted instruction. Prereq: Math 150 or equiv, and 15 or hrs of courses at the 300 level or higher in a dept of agriculture or in biological sciences.

693 Individual Studies U 2-5 G 2-10
Individual work in the field of the chosen problems.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 or hrs for undergrad credit and to a maximum of 35 or hrs for grad credit. This course is graded S/U.

700 Systems of Genetic Analysis U G 3
Analysis of several major systems used in modern experimental genetics.
Au Qtr. 3-1 hr cl. Prereq: 501 or 606 or equiv.

701 Molecular Genetics: DNA Transactions U G 3
Survey of experimental methods of molecular genetics and their application to the elucidation of pathways of DNA replication, mutation, repair, and recombination.
Au Qtr. 3 cl. Prereq: 500 or 506, 501 or Biochem 511 or equiv; and 10 additional hrs in the bio sci above the 300 level.

705 Advances in Cell Biology U G 3
An advanced study of selected key areas of research in eukaryotic cell biology.
Wi Qtr. 3-1 hr cl. Prereq: 607 and 701 or equiv.

711** Molecular Evolution U G 3
Evolution and population genetics as seen at the molecular level: phenonema, concepts, methods of study, and implications for molecular biology and other disciplines.
Wi Qtr. 3 cl. Prereq: 500 or 501 or 600, and 404 or 701 or Plant Biol 613 or Zoology 420; or equiv or permission of instructor.

715 Developmental Genetics U G 3
A study of the regulation of developmentally significant genes and cellular interactions involved in differentiation and pattern formation in Drosophila and metazoans.
Sp Qtr. 3-1 hr cl. Prereq: 608, 700, and 701 or equiv.

733 Human Genetics U G 3
The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenes.
Sp Qtr. 3 cl and cptr time arr. Prereq: 500 or 501 or 606 or equiv. Not open to students with credit for M Biochem 733 or Pathol 733. Cross-listed in M Biochem and Pathol.

Genetics of Animal Populations
See Animl Sc 720.01 and 720.02.

770** Molecular Biology of Animal and Plant Viruses U G 3
An advanced virology course using selected animal and plant viruses as models of eukaryotic gene regulation.
Sp Qtr. 3 cl. Prereq: Biochem 702 or equiv with permission of instructor.

H783 Honors Research U 3-5
A program of reading and research for each student with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing with a grade of A in at least half of the courses in biological sciences and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 yrs of required courses for the degree BA or BS with distinction in mol gen. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

795 Special Topics in Molecular Genetics U G 2
Lecture/discussion in a seminar format of publications; current research or research techniques in molecular genetics, cell biology, or developmental biology.
Su, Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: 500 and permission of instructor. Repeatable to a maximum of 20 cr hrs for undergrads and to a maximum of 36 cr hrs for grad students. This course is graded S/U.

800 Genetic Seminar G 1-3
Faculty, graduate students, and outside speakers will participate.
Au, Wi, Sp Qtrs. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

801 Research Opportunities in Molecular Genetics G 2
Discussion of research projects being carried out in laboratories of the department.
Au Qtr. 1 2-hr cl. Prereq: Grad standing in mol gen. This course is graded S/U.

804 Molecular Genetics Laboratory Rotations G 3
Laboratory research procedures, literature readings, and discussions to familiarize the students with a specific research area.
Au, Wi, Sp Qtrs. Prereq: 611 or 701, or Biochem 611 or 702. Repeatable to a maximum of 9 cr hrs. This course is graded S/U. Required of all 1st yr molecular genetics grad students.

811 Advanced Topics in Molecular Genetics G 3
An examination of the current research in molecular genetics by elective reading assignments and critical analysis during class discussion periods.
Wi Qtr. 3 cl. Prereq: 611 or 701, or Biochem 611 or 702. Repeatable to a maximum of 6 cr hrs, including cr hrs earned in Biochem 811. Cross-listed in Biochemistry.

Current Topics in Animal Genetics
See Animl Sc 820.

831 Eukaryotic Genome: Structure and Expression G 3
Current research on the structure and expression of genes in higher eukaryotes.
Au Qtr. 3 cl. Prereq: Biochem 702 or equiv. Not open to students with credit for Biochem 781, or Biochem 761 or 831, or M Biochem 831. Cross-listed in Biochemistry and Medical Biochemistry.

880 Research Seminars G 1-3
Intensive study of problems in graduate fields of specialization.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 10 grad cr hrs or permission of instructor. Repeatable to a maximum of 30 cr hrs.

880.01 Developmental Genetics
880.02 Cell Biology
880.03 Molecular Evolution/Population Genetics
880.04 Viral Genetics
880.05 DNA Replication, Recombination, Repair
880.06 Gene Expression: Transcriptional Control
880.07 Gene Expression: Post-Transcriptional Control
880.08 Yeast Molecular Biology
880.10 Human Genetics
880.11 Transgenic Models

890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2
Students will present oral reports and lead discussion on research progress in specific areas of developmental biology.
Au, Wi, Sp Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. Given cooperatively by Microbiology, Molecular Genetics, and Plant Biology. This course is graded S/U.

999 Research in Genetics G Arr
Research for thesis and dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Music

110 Weigel Hall, 1866 College Road, 292-6571

Preceding the class sessions of Music 221 and Music 201, placement tests will be given to determine the ability of students in these subjects. See School of Music for details of time and place.

101 Applied Music for Nonmajors Group Instruction I U 2
Au, Wi, Sp Qtr. 2 cl. Open only to non-music majors. VPA Admis Cond courses.

101.01 Piano
101.02 Voice
Repeatable to a maximum of 4 cr hrs.

102 Applied Music for Non-majors Group Instruction II U 2
Wi, Sp Qtr. 2 cl. Open only to non-music majors. VPA Admis Cond courses.

102.01 Piano
Prereq: 101.01.
102.02* Voice
Prereq: 101.02.

105 Athletic Band U 1
Athletic band provides spirited music for various sporting events (men's and women's basketball, spring football game), as well as several concerts. Open to all students with prior high school instrumental experience, no formal audition required. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 188.25. Instruments are available if needed. VPA Admis Cond course.

110 Applied Music (Prospective Music Majors) U 2
An elementary applied music course restricted to prospective music majors whose audition scores indicate the need for systematic instruction to prepare for 201. Au, Wi, Sp Qtr. 1 1/2-hr cl, studio cl and recital attendance arr. Prereq: Audition and approval from the director of the School of Music. Repeatable to a maximum of 4 cr hrs in each decimal subdivision. Does not count toward a major.

110.11 Piano
110.12 Jazz Piano
110.21 Voice
110.31 Violin
110.32 Viola
110.33 Cello
110.34 Double Bass
110.35 Guitar
110.36 Jazz Bass
110.41 Flute
110.42 Oboe
110.43 Clarinet
110.44 Bass Clarinet
110.45 Saxophone
110.46 Bassoon
110.47 Jazz Saxophone
110.51 Horn
110.52 Trumpet
110.53 Trombone
110.54 Euphonium
110.55 Tuba
110.56 Jazz Trumpet
110.57 Jazz Trombone
110.71 Percussion
110.72 Jazz percussion
110.91 Harp

121 Elementary Music Theory and Aural Training U 5
An introduction to the fundamentals of music, music reading, and aural musicianship. Au Qtr. 5 cl. Not open for credit to music majors. May not be substituted for 270. VPA Admis Cond course.

140 Music Cultures of the World U 5
A survey of musical cultures outside the Western European tradition of the fine arts. Su, Au, Wi, Sp Qtr. 3 cl, 2 1-hr lab. GEC arts and hums VPA course. VPA Admis Cond course.

141 Introduction to Music U 5
A consideration of the materials of music and important styles, forms, and composers from the Baroque to the present. Su, Au, Wi, Sp Qtr. 5 cl. Not open for credit to music majors. A musical background is not required. GEC arts and hums VPA course. VPA Admis Cond course.

142 American Popular Music U 5
Historical survey of American popular music, with emphasis on the twentieth century. Su Qtr (1st term). 5 2-hr cl. GEC arts and hums VPA course.

Art and Music since 1945
See Art Educ 160.

200 Applied Music (Secondary) U 1 or 2
Fundamental applied music instruction in areas other than a student's major or principal area. Au, Wi, Sp Qtr. 1 1/2-hr lesson with 1-hr registration; 1-hr lesson with 2-hr registration. Prereq: Music major; open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Each decimal subdivision repeatable to a maximum of 12 cr hrs.

200.11 Piano
200.12 Jazz Piano
200.21 Voice
200.31 Violin
200.32 Viola
200.33 Cello
200.34 Double Bass
200.35 Guitar
200.36 Jazz Bass
200.37 Jazz Guitar
200.41 Flute
200.42 Oboe
200.43 Clarinet
200.44 Bass Clarinet
200.45 Saxophone
200.46 Bassoon
200.47 Jazz Saxophone
200.51 Horn
200.52 Trumpet
200.53 Trombone
200.54 Euphonium
200.55 Tuba
200.56 Jazz Trumpet
200.57 Jazz Trombone
200.71 Percussion
200.72 Jazz Percussion
200.91 Harp

201 Applied Music (Principal) U 2
Instruction in applied music to develop musicianship, performance, and a wide reading knowledge of music literature. Au, Wi, Sp Qtr. 1 1/2-hr lesson, studio cl and recital attendance arr. Prereq: Passing of School of Music entrance audition and test. Required of students in all music curricula, except BA, to a minimum of 8 qtr hrs. Open only to music majors. Repeatable to a maximum of 8 cr hrs in each decimal subdivision. These courses are available for EM credit.

201.11 Piano
201.12 Jazz Piano
201.21 Voice
201.31 Violin
201.32 Viola
201.33 Cello
201.34 Double Bass
201.36 Jazz Bass
201.37 Jazz Guitar
201.41 Flute
201.42 Oboe
201.43 Clarinet
201.44 Bass Clarinet
201.45 Saxophone
201.46 Bassoon
201.47 Jazz Saxophone
201.51 Horn
201.52 Trumpet
201.53 Trombone
201.54 Euphonium
201.55 Tuba
201.56 Jazz Trumpet
201.57 Jazz Trombone
201.71 Percussion
201.72 Jazz Percussion
201.91 Harp
202 Sightreading for Pianists U 1
Developing tactile and visual skills at the keyboard, ensemble sightreading duets, two-piano scores, vocal and instrumental accompanying, transposition, and figured bass realization.
Au, Wi, Sp Qtrs. 1 cr. Prereq: Performance major with specialization in piano. Repeatable to a maximum of 4 cr hrs.

203 University Choirs U 1
Au, Wi, Sp Qtrs.
203.01 Chorale
A selected group of mixed voices which performs an extensive repertoire in concerts both on and off campus. Aplastad.
6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 191. VPA Admis Cond course.

203.02 Symphonic Choir
Symphonic Choir is a concert organization singing a variety of literature. Gallagher.
6 or more hrs rehearsal each wk. Prereq: Admission by audition only. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 191. VPA Admis Cond course.

203.03 University Chorus
Oratorio and large choral works are studied and performed.
3 or more hrs rehearsal each wk. Prereq: Admission by audition only. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 190. VPA Admis Cond course.

203.04 Men's Glee Club
Study and performance of choral literature for men's voices. Gallagher.
3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 193. Membership in this concert group is open to all men students in the University by audition only.

203.05 Women's Glee Club
Study and performance of choral literature for women's voices. Apfelstadt.
3 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 193. Membership in this concert group is open to all women students in the University by audition, VPA Admis Cond course.

204 University Bands U 1
Au, Wi, Sp Qtrs. Each decimal subdivision repeatable to a maximum of 18 cr hrs, including cr hrs earned in the corresponding 188 decimal subdivision. VPA Admis Cond courses.

204.01 University Wind Ensemble
A select group of wind and percussion performers who prepare and perform wind literature from the 18th through the 20th century.
Prereq: Admission by audition and permission of conductor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 188.01.

204.02 University Concert Band
Preparation and performance of traditional and contemporary literature for symphonic band.
Open to all students by audition and permission of conductor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 188.02.

204.03 University Symphonic Band
Preparation and performance of traditional and contemporary literature for symphonic band, Blatti.
Open to all students by audition and permission of conductor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 188.03.

204.04 University Band
Offers the nonmusic major an opportunity to enjoy creating music with limited performance demands.
Open to all students with prior high school instrumental experience; no formal audition required. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 188.04. Instruments are available if needed.

205 University Marching Band U 2
The University Marching Band is a selected group of brass and percussion players which performs at football games and rallies during Autumn Quarter, Woods.
Au Qtr. 6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in 186. No audit. VPA Admis Cond course.

206 Jazz Ensembles U 1
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in the same topic under 191. VPA Admis Cond courses.

206.01 University
A selected group devoted to playing, arranging, and rehearsing with emphasis on contemporary jazz literature, McDaniel.
Au, Wi, Sp Qtrs. 4 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 196.01.

206.02 Laboratory
A selected group devoted to the study and performance of music in various styles of jazz. Whitted.
Au, Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 196.02.

206.03 Workshop
A selected group devoted to the study and performance of music in various jazz, jazz rock, blues, and pop styles. Marr.
Wi, Sp Qtrs. 3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 196.03.

207 Percussion Ensembles U 1
Au, Wi, Sp Qtrs.

207.01 University Percussion Ensemble
A laboratory and performance musical ensemble whose literature consists of original and transcribed works for percussion instruments alone or with percussion as a dominant feature. Burp.
2 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 195. VPA Admis Cond course.

207.02 Steel Pan Ensemble
A laboratory and performance experience on authentic steel pans, concentrating on traditional music of Trinidad, as well as contemporary arrangement. Bump.
2 1/2-hr rehearsals. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 192.

208 Small Ensembles U 1
Au, Wi, Sp Qtrs. 2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Each decimal subdivision repeatable to a maximum of 18 cr hrs, including cr hrs earned in the same topic under 199. VPA Admis Cond courses.

208.01 Piano
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.01.

208.02 Voice
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.02.

208.03 Strings
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.03.

208.04 Woodwinds
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.04.

208.05 Brass
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.05.

208.07 Percussion
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.07.

208.15 Early Music Ensemble
Au, Wi Qtrs. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.15.

208.20 African Performing Ensemble
1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.20, and AfrAmAS 199.20 and 200.20. Cross-listed in African-American and Afric Studies.
Au, Wi Qtrs.

208.21 Slavic Performing Ensemble
Wi, Sp Qtrs. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.21.

208.40 Jazz Combos
Small groups devoted to the study and performance of music in the various jazz combo styles. Marr.
3 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.04.

208.99 Miscellaneous
Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 199.10.

209 Jazz Improvisation U 3
Fundamentals of jazz improvisation; seventh chord structures major, minor, pentatonic and blues scales; jazz patterns and phrasing; analysis and improvisation of blues and II-V progressions. Whitted.
Wi Qtr. 3 cr. Prereq: 221. This course is available for EM credit.

210 Jazz Improvisation II U 3
Improvisation techniques utilizing blues and pentatonic scales, elaboration of seventh chord structures; analysis of transcribed solos; improvisation of vertical, horizontal, and combination tunes; exploration of bebop and postbop literature. Marr and Whitted.
Wi Qtr. 3 cr. Prereq: 209. This course is available for EM credit.

211 Jazz Improvisation III U 3
Continuation of 210; technique development utilizing fourth patterns; concepts in modal and linear improvisation; increasing emphasis on postbop literature; extensive practice in playing changes of bebop tunes. Masters.
Au Qtr. 3 cr. Prereq: 210.
212 Introduction to Phonetic Alphabet U 2
Introduction to the International Phonetic Alphabet and its application to singing in foreign languages. Wi, Qtr. 3 cr. Prereq: Minimum of 2 cr hrs of applied study in voice or written permission of instructor.

215 University Orchestra U 1
Au, Wi, Sp Qtr.

215.01 University Symphony Orchestra
The University Orchestra is an 85-piece orchestra of full instrumentation devoted to the preparation of standard and modern literature; the group gives at least three concerts each year. Haddock.
6 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of director. Repeatable to a maximum of 18 cr hrs, including cr hrs earned in 184. Membership is open to all University students by audition. VPA Admis Cond course.

220 Introduction to Music Technology U 3
Introduction to the use of technology in the practice and study of music. Au, Wi Qtrs. 3 cr. Prereq: Passing placement tests. Open only to music majors.

221 Music Theory I U 3
Elements of music and musical notation; analytical concepts and terminology; fundamentals of harmony, part-writing, and melody; extensive practice through written drill and creative projects. Au, Wi, Qtrs. 3 cr. Prereq: Passing of placement tests. This course is available for IM credit.

222 Music Theory II U 3
Principles of diatonic harmony, nonchordal melodic elements, and homophonic phrase structures; extensive practice in part-writing, analysis, and creative application. Wi, Sp Qtrs. 3 cr. Prereq: 221. This course is available for EM credit.

223 Music Theory III U 3
Continuation of 222, including diatonic modulation and secondary dominant functions (emphasis on creative projects). Su, Sp Qtrs. 3 cr. Prereq: 222. This course is available for EM credit.

225 Aural Training I U 2
Training in aural musicianship and music reading; practical application through solfege, dictation, and keyboard drill. Wi, Sp Qtrs. 4 lab hrs. Prereq: 220. This course is available for EM credit.

226 Aural Training II U 2
A continuation of 225, with attention to harmonic, contrapuntal, and rhythmic problems. Su, Sp Qtrs. 4 lab hrs. Prereq: 225. This course is available for EM credit.

231 Jazz Theory U 2
The forms and compositional techniques of jazz, including chord progression formulas, chord alteration, lead-sheet paraphrasing, countermelody and bass-line construction, and creative application. Marr. Wi Qtr. 3 cr. Prereq: 261.01 and 231.

240 Listening to Music Literature U 1
Basic instruction in listening to and recognizing the elements and procedures that underlie musical style; aurial analysis of masterworks from the 18th-20th centuries. Sp Qtr. 2 cr. Open only to music majors. This course is graded S/U.

241 Music History I U 3
The development of European art music from the earliest times through the 18th century. Au Qtr. 4 cr, 1 1-hr lab. Prereq: 240.

242 Music History II U 3
The development of European and American art music in the 17th and 18th centuries. Wi Qtr. 4 cr, 1 1-hr lab. Prereq: 241.

243 Music History III U 3
The development of European and American art music in the 19th and 20th centuries. Sp Qtr. 4 cr, 1 1-hr lab. Prereq: 242.

244 Survey of African and African-Derived Music in the Western World U 3
An introduction to traditional African music and its role in the history and development of Afro-American music with its concomitant sociopolitical milieu. Avortibor and McDaniels.
Wi, Sp Qtrs. 3 cr. Not open to students with credit for AIAH and AAS 244. Cross-listed in African-American and African Studies. VPA Admis Cond course.

261 Applied Music Methods and Materials I
These courses are available for EM credit.
261.01 Piano U 1
Au Qtr. 2 cr. Prereq: Music major and precon or concurs: 221. Not open to keyboard majors.

261.02 String U 2
Au Qtr. 3 cr. Not open to voice majors.

261.03 Strings U 2
Gillespie.
Au Qtr. 4 cr.

261.05 Brass U 2
Au Qtr. 4 cr. Not open to brass majors.

261.07 Percussion U 2
Wi, Sp Qtrs. 4 cr.

261.11 Conducting Laboratory U 2
Basic conducting skill development emphasizing pulse, rhythm, and physical coordination. Blatt and Apfelstaedt.
Au, Wi, Sp Qtrs. 4 cr. Prereq: 223.

261.35 Guitar U 2
Wi Qtr. 3 cr. Prereq: 170. Open only to mus ed majors. Not open to music majors with guitar specializations.

261.41 Flute U 1
Au, Wi, Sp Qtrs. 4 cr. 5-wk course. Limited to dept majors.

261.42 Oboe U 1
Au, Wi, Sp Qtrs. 4 cr. 5-wk course, Prereq: 261.41 or 261.43. Limited to dept majors.

261.43 Clarinet U 1
Au, Wi, Sp Qtrs. 4 cr. 5-wk course. Limited to dept majors.

261.45 Saxophone U 1
Au, Wi, Sp Qtrs. 4 cr. 5-wk course. Limited to dept majors.

261.46 Bassoon U 1
Au, Wi, Sp Qtrs. 4 cr. 5-wk course. Prereq: 261.41 or 261.43. Limited to dept majors.

261.99 Wind, Strings, and Percussion U 2
Functional knowledge of wind, strings, and percussion instruments. Sp Qtr. 4 cr. Prereq: 170. Limited to dept majors; not open to instrumental majors.

262 Applied Music Methods and Materials II
Prefer: 261 or equiv. These courses are available for EM credit.

262.01 Piano U 1
Wi Qtr. 2 cr. Prereq: Music major and 261.01 or equiv. Not open to keyboard majors.

262.02* Voice U 2
Wi Qtr. 4 cr. Not open to voice majors.

262.03 Strings U 2
Wi Qtr. 4 cr.

262.05 Brass U 2
Wi, Sp Qtrs. 4 cr.

262.11 Conducting (Instrumental) U 2
Conducting instruction applied to band, orchestra and ensemble literature and performance. Blatt.
Wi, Sp Qtrs. 4 cr.

262.12 Conducting (Choral) U 2
Conducting instruction applied to choral literature and performance problems. Gallagher.
Wi Qtr. 4 cr. Prereq: 261.11.

263 Applied Music Methods and Materials III
Prefer: 262 or equiv. These courses are available for EM credit.

263.01 Piano U 1
Sp Qtr. 2 cr. Prereq: Music major and 262.01 or equiv.

263.02 Voice U 2
Gallagher.
Sp Qtr. 4 cr.

264 Applied Music Methods and Materials IV
Prefer: 263 or equiv. These courses are available for EM credit.

264.01 Piano U 1
Au Qtr. 2 cr. Prereq: 263.01 or equiv and passage of Level Change Proficiency by a score of 70 or better.
264.02 Voice U 2
Gallagher.
Au Qtr. 4 cl.

265 Applied Music Methods and Materials V
265.01 Piano U 1
Functional keyboard skills for the music major, including sight-reading, harmonization, open score reading, accompanying and improvisation. Wi Qtr. 2 cl. Prereq: Music major and 264.01 or equiv.

266 Applied Music Methods and Materials VI
266.01 Piano U 1
Functional keyboard skills for the music major, including sight-reading, harmonization, open score reading, accompanying and improvisation. Sp Qtr. 2 cl. Prereq: Music major and 265.01 or equiv. Repeatable to a maximum of 2 cr. hrs.

267* String Pedagogy for the Applied Studio U 2
The organization, development, and pedagogy for the applied string instrument studio.
Au Qtr. 1 2-hr cl, 2-hr lab. Prereq: 201 or permission of instructor.

268 Instrument Repair U 1
Development of practical skills in identifying and correcting minor repair problems on band and orchestral instruments and their accessories. Spellman.
Su, Au, Wi, Sp Qtr. 3 cl. Prereq: 262.04, 262.05, and permission of instructor. Repeatable to a maximum of 2 cr. hrs.

269 Orientation to Music Education U 1
Overview of career options in music education; includes clinical/field observation in a variety of settings.
Sp Qtr. 1 cl, 1.5-hr lab. Prereq: Enrollment in School of Music. Not open to students with credit for 170.

270 Basic Experiences in Music U 4
Basic and extended experiences in elements of music through singing, listening to music, playing instruments, and reading and creating music. Au, Wi, Sp Qtr. 5 cl. Prereq: Soph standing. This course is available for EM credit.

293 Individual Studies U 1-3
293.01 Composition
Au, Wi, Sp Qtrs. Prereq: Written permission of area chairperson. Repeatable to a maximum of 6 cr. hrs. This course is graded S/U.

294 Group Studies U 1-5
Supervised group studies of special problems.
Su, Au, Wi, Sp Qtr. Permission of instructor. Repeatable to a maximum of 6 cr. hrs.

297 Music Education Laboratory Ensemble U 1
Laboratory ensembles which provide performance experience on secondary instruments. Gillespie.
Sp Qtr. 2 or more hrs rehearsal each wk. Prereq: Permission of instructor. Repeatable to a maximum of 3 cr. hrs, including cr hrs earned in 297. VPA Admins Cond course.

310 Introduction to Operatic Stage Techniques U 2
An introductory course to stage movement techniques, character analysis, role preparation, as applied to the operatic stage.
Au Qtr. 3 cl. Prereq: 401.21 or 402.21 or permission of instructor.

311 Opera Scenes U 2
A performance ensemble class devoted to the rehearsing and performing of opera scenes; basic rehearsal and performing techniques for operatic literature.
Wi Qtr. 3 1/2-hr cl. Prereq: 310 or permission of instructor. Open only to music majors by audition. Repeatable to a maximum of 8 cr. hrs.

312 Opera Performance U 2
Instruction and experience in preparation for opera performance, including study of operatic literature and coaching of operatic roles. Koran.
Au, Wi, Sp Qtr. 12 lab hrs. Prereq: 310 or permission of instructor. Kordination by audition only. Repeatable to a maximum of 10 cr. hrs.

341* Music in the United States U 5
Music by American composers and the place of music in American life from colonial times to the present.
Wi Qtr. 4 cl, 1 lab hr. Prereq: English 110 or 111 or equiv, and 141 or permission of instructor. Not open for credit to music majors. GEC arts and hums VPA course.

342* Introduction to Opera U 5
An introduction to the dramatic and musical conventions of opera. Boone.
Sp Qtr. 4 cl, 1.5-hr lab hr. Prereq: English 110 or 111 or equiv. GEC arts and hums VPA course.

345 Topics in Music U 3-5
Topic varies; study of selected topics in music.
Art: Each decimal subdivision repeatable to a maximum of 15 or hrs.

361* Music History
Topic varies; study of selected topics in the history of Western music. Not offered at the Columbus Campus. Prereq: 141. GEC arts and hums VPA course.

347* Great Composers of 18th Century Europe U 3
The styles and genres of five eminent composers of the 18th century: Bach, Handel, Mozart, Haydn, and Beethoven.
Au Qtr. 3 cl. Prereq: 141 or 242, and English 110 or 111 or equiv, or permission of instructor. GEC arts and hums VPA course.

349* 20th-Century Music U 3
The main trends in Western art music from Debussy to the avant garde.
Sp Qtr. 3 cl. Prereq: 141 or 243, and English 110 or 111 or equiv, or permission of instructor. GEC arts and hums VPA course.

351 The World of Music U 3
Introduction to music in non-Western cultures and societies and to the concepts, vocabulary, and methodology for dealing with this music.
Au Qtr. 3 cl, 1 1-hr lab. Prereq: Soph standing or higher. Not open to students with credit for 250. Open only to music majors.

352 Selected World Musics, Group I U 3
An introduction to music in various Native American, African, and Eastern European cultures.
Wi Qtr. 3 cl. Prereq: 250 or 351. Not open to students with credit for 251.

353 Selected World Musics, Group II U 3
An introduction to music in various South Indian, Indonesian, and Latin American cultures.
Sp Qtr. 3 cl. Prereq: 250 or 351. Not open to students with credit for 252.

370 Music for Elementary Teachers U 3
Music literature and teaching aids for children, including singing, rhythmic, creative, and listening experiences, and their presentation.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 270 and professional standing.

371 Music for Teachers of Young Children U 3
Instructional materials, methods, and musical skills needed for guiding young children's music and movement learning experiences applied to preschools and kindergarten. Fregow.
Au Qtr. 2 1/2-hr cl. Not open to music majors. Designed for prospective teachers of young children and personnel of preschools and kindergartens.

373 Music for Special Education Teachers U 3
Music literature and teaching strategies for exceptional children, including singing, rhythmic, creative, and listening experiences. McCrory.
Wi, Sp Qtrs. 5 cl. Prereq: Jr or sr standing in Ed-PAES.

401 Applied Music (Principal) U 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature.
Au, Wi, Sp Qtr. (except 401.14). 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 201 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of the School of Music. Each decimal subdivision repeatable to a maximum of 8 cr. hrs.

401.11 Piano
401.12 Jazz Piano
401.21 Voice
401.31 Violin
401.32 Viola
401.33 Cello
401.34 Double Bass
401.36 Jazz Bass
401.37 Jazz Guitar
401.41 Flute
401.42 Oboe
401.43 Clarinet
401.44 Bass Clarinet
401.45 Saxophone
401.46 Bassoon
401.47 Jazz Saxophone
401.51 Horn
401.52 Trumpet
401.53 Trombone
401.54 Euphonium
401.55 Tuba
401.56 Jazz Trumpet
402.11 Piano U 2 or 4
402.21 Voice U 3
402.31 Violin U 2 or 4
402.32 Viola U 2 or 4
402.33 Cello U 2 or 4
402.34 Double Bass U 2 or 4
402.41 Flute U 2 or 4
402.42 Oboe U 2 or 4
402.43 Clarinet U 2 or 4
402.44 Bass Clarinet U 2 or 4
402.45 Saxophone U 2 or 4
402.46 Bassoon U 2 or 4
402.51 Horn U 2 or 4
402.52 Trumpet U 2 or 4
402.53 Trombone U 2 or 4
402.54 Euphonium U 2 or 4
402.55 Tuba U 2 or 4
402.71 Percussion U 2 or 4
402.51 Harp U 2 or 4

412 Italian Diction for Singers U 2
Advanced study of phonetics and sound production as applied to singing in Italian.
Sp Qtr. 3 cl. Prereq: 212.

413 German Diction for Singers U 2
Advanced study of phonetics and sound production as applied to singing in German.
Au Qtr. 3 cl. Prereq: 212.

414 French Diction for Singers U 2
Advanced study of phonetics and sound production as applied to singing in French.
Wi Qtr. 3 cl. Prereq: 212.

421 Music Theory IV U 3
Principles of 18th- and 19th-century chromatic harmony and modulation; extensive practice in part-writing, analysis, and creative application.
Au Qtr. 3 cl. Prereq: 222.

422 Music Theory V U 3
Compositional techniques in early 20th-century music; extensive practice through written drill, analysis, and creative projects.
Wi Qtr. 3 cl. Prereq: 421.

423 Music Theory VI U 3
Continuation of 422, focusing on more recent developments in 20th-century music (emphasis on creative projects).
Sp Qtr. 3 cl. Prereq: 422.

424 Aural Training III U 2
Intensive training in aural musicianship and music reading; practical application through college, dictation, and keyboard drill.
Au Qtr. 4 lab hrs. Prereq: 226. Not open to students with credit for 430.01.

425 Aural Training IV U 2
A continuation of 424 at a more advanced level.
Wi Qtr. 4 lab hrs. Prereq: 424. Not open to students with credit for 430.02.

426 Aural Training V U 2
A continuation of 425; aural training at an advanced level.
Sp Qtr. 4 lab hrs. Prereq: 425. Not open to students with credit for 430.03.

427* Keyboard Harmony I U 2
Systematic review and utilization of basic harmonic materials at the keyboard.
Au Qtr. 2 cl. Prereq: 201.01 (6 cr hrs), 261.01, 262.01, and 263.01 (6 cr hrs), or equivs.

428* Keyboard Harmony II U 2
Introduction to score reading at the keyboard.
Wi Qtr. 2 cl. Prereq: 427.

429* Keyboard Harmony III U 2
Continued practical experience in score reading at the keyboard.
Sp Qtr. 2 cl. Prereq: 428.

433 Scoring for Jazz Ensembles U 3
433.02* Small Jazz Ensembles
Scoring projects for jazz combos of various sizes and instrumentation.
Marr. Wi Qtr. 3 cl. Prereq: 223 and 231.

433.03* Large Jazz Ensembles
Scoring projects for the stage band, with concentration on voicing, ranges, doublings, balance, and notational procedures. Marr.
Wi Qtr. 3 cl. Prereq: 433.02. Not open to students with credit for 433.01.

446* Survey of Jazz Styles U 3
Stylistic variants of jazz involving technical and structural aspects so that the student may recognize, play, and score them authentically, McDaniel.
Sp Qtr. 3 cl. Prereq: Permission of instructor.

470 Introduction to Music Education U 4
Professional orientation for prospective school music teachers; study of musical development, human relations, discipline, evaluation, philosophy of teaching, and the music curriculum; comprehensive field experience. Forsythe and McCrory.
Au Wi Qtrs. 2 cl, 2-2 hr labs. Prereq: Soph standing in music educ and Psych 100.

500 Review of Music Topics G 3
Review of selected music topics; intended for beginning graduate students in music.
Su Wi Sp Qtrs. 3 cl. Prereq: Grad standing in music.

500.01 Review of Music Analysis Techniques
Review of notation symbolism, nomenclature, part-writing practices, and analytic techniques related to Western music composed from the mid-18th through the mid-20th centuries.
Sp Qtr. Not open to students with credit for 620. Repeatable to a maximum of 9 cr hrs, including cr hrs earned in 620.

500.02 Review of Music History
Review of Western music history from ancient Greek times to the present; study of genres, composers, and elements of musical styles.
Su Wi Qtrs. Repeatable to a maximum of 9 cr hrs.

501 Applied Music (Principal) U 2
Applied music instruction required in the BME curriculum to develop musicianship, performance, and a wide reading knowledge of music literature.
Au Wi. Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 401 and permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of the director of School of Music. Repeatable to a maximum of 8 cr hrs for each decimal subdivision.

501.11 Piano
501.12 Jazz Piano
501.21 Voice
501.31 Violin
501.32 Viola
501.33 Cello
501.34 Double Bass
501.35 Guitar
501.36 Jazz Bass
501.37 Jazz Guitar
501.41 Flute
501.42 Oboe
501.43 Clarinet
501.44 Bass Clarinet
501.45 Saxophone
501.46 Bassoon
501.47 Jazz Saxophone
501.51 Horn
501.52 Trumpet
501.53 Trombone
501.54 Euphonium
501.55 Tuba
501.56 Jazz Trumpet
501.57 Jazz Trombone
501.71 Percussion
501.72 Jazz Percussion
501.91 Harp
### Music

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>502</td>
<td>Applied Music (Major) U 3 or 4</td>
<td>U 3</td>
<td>Instruction required in BM curricula in performance to develop professional qualities of musicianship, technique, and knowledge of music literature; half recital required in junior year. Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl and recital attendance arr. Prereq: 402 and written permission of applied area faculty. Repeatable to a maximum of 16 cr hrs for each decimal subdivision.</td>
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<tr>
<td>502.11</td>
<td>Piano</td>
<td>U 3</td>
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<td>502.12</td>
<td>Jazz Piano</td>
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<td>502.21</td>
<td>Voice</td>
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<td>502.36</td>
<td>Jazz Bass</td>
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<td>Jazz Guitar</td>
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<td>502.41</td>
<td>Flute</td>
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<td>Oboe</td>
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<td>Clarinet</td>
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<td>502.44</td>
<td>Bass Clarinet</td>
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<td>Saxophone</td>
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<td>Bassoon</td>
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<td>Jazz Saxophone</td>
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<td>Horn</td>
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<td>Percussion</td>
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<td>Jazz Percussion</td>
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<td>502.91</td>
<td>Harp</td>
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<tr>
<td>510*</td>
<td>Advanced Jazz Improvisation U 3</td>
<td>U 3</td>
<td>Advanced techniques of improvisation; the use of modal devices, complex meters, and innovative forms; concern for speed, endurance, energy levels, and problems of unaccompanied performance. Marr. Sp Qtr. 3 cr. Prereq: 311 or permission of instructor.</td>
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<tr>
<td>521</td>
<td>Form and Analysis U 3</td>
<td>U 3</td>
<td>Detailed study of the structural principles and forms of homophonic music. Au, Wi, Sp Qtrs. 3 cr. Prereq: 423.</td>
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<tr>
<td>524</td>
<td>Orchestration I U 3</td>
<td>U 3</td>
<td>A fundamental course in scoring for the instruments of the orchestra and band in transcriptions and arrangements. Wi, Sp Qtrs. 3 cr. Prereq: 423.</td>
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<tr>
<td>531</td>
<td>Elementary Studies in Counterpoint U 3</td>
<td>U 3</td>
<td>A fundamental course in counterpoint including study of the basic principles of 18th-century polyphony. Au Qtr. 3 cr. Prereq: 423.</td>
</tr>
<tr>
<td>533*</td>
<td>Jazz Composition U 3</td>
<td>U 3</td>
<td>A fundamental course in composition, with emphasis on creative writing in the small forms. Sp Qtr. 3 cr. Prereq: 433.03.</td>
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<tr>
<td>535</td>
<td>Composition I U 3</td>
<td>U 3</td>
<td>A fundamental course in composition, with emphasis on creative writing in the small forms. Au Qtr. 3 cr. Prereq: 423.</td>
</tr>
<tr>
<td>546*</td>
<td>Modern and Contemporary Jazz Styles U 3</td>
<td>U 3</td>
<td>Modern and contemporary jazz styles from the Be-bop School of the 1940's to the present day. Sp Qtr. 3 cr. Prereq: 446.</td>
</tr>
<tr>
<td>555</td>
<td>Studies in Musicology</td>
<td>U 3</td>
<td>Introduction to specialized topics and issues in historical musicology and ethnomusicology. Au, Wi, Sp Qtrs. 2 1/2-hr cr. Prereq: Admission to BM in music history or permission of instructor.</td>
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<tr>
<td>555.01</td>
<td>Medieval Music U 4</td>
<td>U 4</td>
<td>Au Qtr.</td>
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<td>555.02</td>
<td>Renaissance Music U 4</td>
<td>U 4</td>
<td>Wi Qtr.</td>
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<td>555.03</td>
<td>Baroque Music U 4</td>
<td>U 4</td>
<td>Sp Qtr.</td>
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<td>555.04</td>
<td>Classic Music U 4</td>
<td>U 4</td>
<td>Au Qtr.</td>
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<td>555.05</td>
<td>Romantic Music U 4</td>
<td>U 4</td>
<td>Wi Qtr.</td>
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<td>555.06</td>
<td>20th-Century Music U 4</td>
<td>U 4</td>
<td>Sp Qtr.</td>
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<td>555.07</td>
<td>19th-Century Russian Music U 5</td>
<td>U 5</td>
<td>Au Qtr.</td>
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<td>555.08</td>
<td>20th-Century Russian Music U 5</td>
<td>U 5</td>
<td>Wi Qtr.</td>
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<tr>
<td>555.09</td>
<td>Contemporary Art Music of Africa and the Diaspora U 5</td>
<td>U 5</td>
<td>Sp Qtr.</td>
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</tbody>
</table>

#### Additional Courses

566* Jazz Ensemble Techniques U 3
The organization and operation of the public school jazz ensemble. Whittred. Wi Qtr. 3 cr. Prereq: Permission of instructor.

572 General Music in Secondary Schools: Middle and Junior High School General Music U 3
The role of music in adolescents' general education and the development of competencies essential to teaching. Gerber. Au, Wi Qtrns. 3 cr, 1 lab hr. Prereq: Enrollment n EDP.

574 Choral Music in the Schools: Basic Teaching Practices U 3
Factors relating to organizing and teaching choral music in elementary, middle, and junior high schools. O'Toole. Au Qtr. 2 cr, 2 lab hrs. Prereq: Enrollment in EDP.

575 Choral Music in Senior High Schools U 3
Rehearsal procedures, choral techniques, materials, and literature suited to various choral organizations of senior high schools. O'Toole. Wi Qtr. 2 cr, 2 lab hrs. Prereq: 574, and enrollment in EDP.

576 Instrumental Music in Elementary and Middle Schools U 3
The role of instrumental music instruction in education, techniques of teaching instrumental music, study of music appropriate to musical organizations in elementary and middle schools. Au Qtr. 3 cr. Prereq: 261.07, 261.41, 261.42, 261.43, 261.45, 261.46, 262.03, 262.05, 262.11, and enrollment in EDP.

577 Instrumental Music in Secondary Schools U 3
The role of instrumental music instruction in public education, techniques of teaching instrumental music, study of music appropriate to musical organizations in secondary schools. Woods. Wi Qtr. 3 cr, 1 1-hr lab. Prereq: 576 and enrollment in EDP.

578 General Music in Elementary Schools: Introduction and Literature U 3
Introduction to Dalcroze and Orff methodologies; study and analysis of music literature suitable for children in elementary schools. Frego. Au Qtr. 2 1 1/2-hr cr, 1 lab hr. Prereq: Enrollment in EDP. Not open to students with credit for 571.

579 General Music in Elementary Schools: Planning and Practicum U 3
A study of Kodaly and intermediate Orff methodologies; the planning and implementation of musical experiences for children in elementary schools. Frego. Wi Qtr. 2 1 1/2-hr cr, 1 lab hr. Prereq: Enrollment in EDP 578 or permission of Instructor. Not open to students with credit for 579.

586 Student Teaching in Music in Elementary Schools U 3-8
Assignment to area elementary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors. Au, Wi, Sp Qtrs. Repeatable to a maximum of 8 cr hrs.

587 Student Teaching in Music in Secondary Schools U 3-8
Assignment to area secondary schools for observation and teaching experiences with groups of students and cooperating teachers; students attend weekly seminars with University supervisors. Au, Wi, Sp Qtrs. Repeatable to a maximum of 8 cr hrs.

591* Survey of the Music Industry U 3
Economic aspects of music in America with reference to recordings, films, TV, radio, music theatre, booking, management, publishing, and manufacturing. Marr. Sp Qtr. 3 cr. Prereq: Sr standing or permission of instructor.
601 Applied Music (Principal) U 1 or 2
Elective applied music instruction at the senior level for students in the BME curriculum; continuation of study of literature, technique, and musicianship.
Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 501 and permission of applied area faculty. Open to other quartered students within the limits of institutional facilities by permission of director of School of Music. Each decimal subdivision repeatable to a maximum of 8 cr hrs.

601.11 Piano
601.21 Voice
601.31 Violin
601.32 Viola
601.33 Cello
601.34 Double Bass
601.35 Guitar
601.41 Flute
601.42 Oboe
601.43 Clarinet
601.44 Bass Clarinet
601.45 Saxophone
601.46 Bassoon
601.51 Horn
601.52 Trumpet
601.53 Trombone
601.55 Tuba
601.71 Percussion
601.91 Harp

602 Applied Music (Major) U 4
Applied music instruction required in BM curricula in performance to develop professional qualities of musicianship; full recital required in senior year.
Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: 502 and written permission of applied area faculty. Each decimal subdivision repeatable to a maximum of 18 cr hrs.

602.11 Piano
602.12 Voice
602.31 Violin
602.32 Viola
602.33 Cello
602.34 Double Bass
602.41 Flute
602.42 Oboe
602.43 Clarinet
602.44 Bass Clarinet
602.45 Saxophone
602.46 Bassoon
602.51 Horn
602.52 Trumpet
602.53 Trombone
602.54 Euphonium
602.55 Tuba
602.71 Percussion
602.91 Harp

607 Performance Enhancement I U G 1
Skills and techniques designed to enhance the quality of public performances.
Au, Wi, Sp Qtrs. 1 cl. Not limited to music majors. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

608 Performance Enhancement II U G 1
Advanced skills and techniques designed to enhance the quality of public performances.
Au, Wi, Sp Qtrs. 1 cl. Prereq: 607 or permission of instructor. Not limited to music majors. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

610 Alexander Technique U G 1
The relationship of kinesthetic perception and the postural reflexes to physical coordination in performance. Conable.
Au, Wi, Sp Qtrs. 2 cl. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

611 Introduction to Piano Pedagogy U G 3
A critical analysis of various methods and principles of piano instruction, and of literature for the beginning and intermediate performer. R. Johnson.
Au Qtr. 3 cl. Prereq: 6 cr hrs in 501.01 or 501.11 or permission of instructor.

612 Piano Pedagogy: Group Instruction U G 3
Concepts of group piano instruction, techniques for development of keyboard musicianship, and knowledge of appropriate materials. R. Johnson.
Wi Qtr. 3 cl. Prereq: 6 cr hrs in 501.01 or 501.11 or permission of instructor.

613 Piano Pedagogy: Practicum U G 3
To provide supervised experience in piano instruction and guidance in the development of sequences of instruction and in the treatment of specific teaching problems. R. Johnson.
Sp Qtr. 3 cl. Prereq: 611 or 612 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

621 Theory and Analysis: 17th-18th Centuries U G 3
Analysis of representative works from the 17th-18th century, introducing relevant theoretical concepts.
Wi Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

622 Theory and Analysis: 19th Century U G 3
Analysis of representative works from the 19th century, introducing relevant theoretical concepts.
Sp Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

623 Theory and Analysis: 20th Century U G 3
Analysis of representative works from the 20th century, introducing relevant theoretical concepts.
Au Qtr. 3 cl. Prereq: 521 or 620, or a score in the upper third on the grad placement exam.

625* Orchestration II U G 3
Study of 20th-century orchestration techniques, including readings in recent literature on timbre and timbre perception; scoring of transcriptions and students' compositions for various ensembles. Sp Qtr. 3 cl. Prereq: 524.

630 Composers Seminar U G 1
Contemporary topics in composition and theory; presentation, performance, and criticism of student compositions and papers. Au, Wi, Sp Qtrs. 1 1 1/2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

631* Intermediate Studies in Counterpoint U G 3
Counterpoint based on the polyphonic style of the 18th century; analysis of representative works and practice in writing two- and three-part inventions. Wi Qtr. 3 cl. Prereq: 531 or permission of instructor.

635 Composition II U G 3-5
Practice in creative writing; analysis, and evaluation; employment of contemporary methods of composition.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 530 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

636* Introduction to Electronic Music Synthesis U G 3
Techniques of composition with electronic media; history, literature, and criticism; score preparation; principles of audio engineering; relationships to other communications media. Wells.
Au Qtr. 3 cl. Prereq: 429 and permission of instructor.

637 Composition with Electronic Media I U G 3-5
Individual composition projects; further study of sound synthesis techniques, including modification of natural sounds. Wells.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 536, real time electronica, acoustical modification or equiv and 636. Repeatable to a maximum of 9 cr hrs.

638* Audio Recording U G 3
Audio recording; microphones and microphone placement; multiple-track recording; mixing; equalization and special effects. Atronic.
Wi Qtr. 3 cl. Prereq: Elec Eng 201 or with written permission of instructor. Not open to students with 6 or hrs of Elec Eng 626. 626.

639* Audio Recording Laboratory U G 2
Creating real audio recording; familiarity with the recording studio and console, use and placement of microphones; multitrack recording, equalization and special effects; mixing. Atronic.
Sp Qtr. 1 cl, 1-hr lab. Prereq: 639. Not open to students with 6 or hrs of Elec Eng 626. Repeatable to a maximum of 6 cr hrs.

640* History of Music in the United States U G 3
A survey of music in the United States from colonial times until the present. Wi Qtr. 3 cl. Prereq: Jr or sr standing.
647† Individual Composers: Their Lives and Works U G 3
A comprehensive study of the works of an individual composer; topic varies from year to year.
3 cr. Prereq: 521 or 531, and 243.

648* History and Literature of Chamber Music U G 2
A survey of the history and stylistic development of chamber music. Wi Qtr. 2 1/2-hr cr. Prereq: 243 and 521 or 531.

649† History and Literature of Symphonic Music U G 3
A survey of the history and stylistic development of symphonic music.
Au Qtr. 2 1/2-hr cr. Prereq: 243 and 521 or 531.

650† History and Literature of Choral Music U G 3
A survey of the history and stylistic development of choral music. Atkinson. Wi Qtr. 2 1/2-hr cr. Prereq: 243 and 521 or 531.

651* History and Literature of Opera U G 3
A survey of the history and stylistic development of opera.
Sp Qtr. 2 1/2-hr cr. Prereq: 243 and 521 or 531.

652 18th and 19th Century Song Literature U G 3
The study of selected 18th and 19th century song literature. L. Robinson. Au Qtr. 3 cr. Prereq: 243 and 423.

653 Piano Literature U G 3
A study of the piano sonata and other characteristic forms from the pre-piano period to the present time.
Sp Qtr. 3 cr. Prereq: 243 and 521 or 531. Gren.

655 20th Century Song Literature U G 3
The study of selected 20th century song literature. L. Robinson. Wi Qtr. 2 1/2-hr cr. Prereq: 652 or grad standing.

660 Advanced Conducting (Instrumental) U G 3
An attempt to develop the power to interpret the larger forms of instrumental literature and to read from full score. Blatti. Wi Qtr. 3 cr. Prereq: 262.11 and 521.

661 Advanced Conducting (Choral) U G 3
Development of power to interpret the larger forms of choral literature and to read from full score. Apfelstadt. Sp Qtr. 3 cr. Prereq: 262.12 and 521.

662 Choral Repertoire U G 2
Reading and study of sacred and secular choral literature. Su, Wi Qtrs. 1 cr. 1-2 hr lab. Repeatable to a maximum of 6 cr hrs.

665 Content and Structure in Arts Education U G 3
Students from art, dance, music, and theatre education engage in dialogue, research, and peer teaching focused upon the educational content and structure of each discipline. Gerber. Sp Qtr. 1 2/3-hr cr. Open only to majors in art, dance, music, and theatre education and to grad students seeking certification. Not open to students with credit for Art Educ 665. Cross-listed in Art Education.

666 Marching Band Techniques U G 3
A study of the marching band including laboratory work in marching techniques, computerized charting, and show design.
Sp Qtr. 1 3/4 cr. Not open to freshmen. Open to non-music majors with written permission of instructor. Wood.

669 Music Methods for Elementary Classroom Teachers G 3
Analysis and appraisal of the music program in elementary schools; relationship of music to total school program; some emphasis on integrating the arts in education. McCray. Su (1st Term) Qtr. 3 2-hr cr. Prereq: 270 or permission of instructor.

672 Introduction to Ethnomusicology U G 3
General concepts of ethnomusicology applied to the study of different ways in which music has been used outside the Western European tradition of the fine arts.
Au Qtr. 2 1/2-hr cr. Prereq: Jr or sr or grad standing.

675* Music of the Russian Folk Tradition U G 3
An interdisciplinary study of traditional music of Russian peasants. Mazo. Wi Qtr. 2 1/2-hr cr. Prereq: Jr or sr or grad standing.

677† Multimedia for Musicians U G 3
Designed to provide musicians with the tools to create multimedia works for use in music education, research, or as a creative medium.
Sp Qtr. 3 1-hr cr. Prereq: 220 or 676 or permission of instructor.

679 Music Theory and Composition Senior Project U G 2
Composition students: preparation of senior composition and half recital of student's compositions; theory students: preparation of senior paper and presentation of paper.
Au, Wi, Sp Qtrs. Prereq: Admission into music theory and composition major and permission of instructor. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

685† Women and Music U G 3
A consideration of the roles of women in Western music, building upon current scholarship in the areas of women in music and of gender studies.
2 1/2-hr cr. Prereq: 243 and 521 or 531, or equivs. Not open to students with credit for 344.

692 Workshop in Music U G 1-15
Concentrated study in an area of music; content of workshop depends on selected emphasis.
Su, Au, Wi, Sp Qtr. Arr. Repeatable to a maximum of 15 cr hrs.

693 Individual Studies U G 1-5
Individual studies in specified problems in the field of music. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694 Group Studies U G 1-5
Supervised group studies of special problems in the field of music. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign

701 Applied Music (Non-Major) U G 1 or 2
Applied music study with special emphasis on literature and performance practices.
Au, Wi, Sp Qtrs. 1/2-hr lesson with 1-cr registration; 1-hr lesson with 2-cr registration. Prereq: Placement exam or permission of applied area faculty. Each subsequent subdivision repeatable to a maximum of 12 cr hrs.

701.11 Piano
701.21 Voice
701.31 Violin
701.32 Viola
701.33 Cello
701.34 Double Bass
701.41 Flute
701.42 Oboe
701.43 Clarinet
701.44 Bass Clarinet
701.45 Saxophone
701.46 Bassoon
701.51 Horn
701.52 Trumpet
701.53 Trombone
701.54 Euphonium
701.55 Tuba
701.71 Percussion
701.91 Harp

710 Introduction to Operatic Stage Techniques G 2
An introduction to stage movement techniques, character analysis, role preparation, and aria interpretation as applied to the operatic stage.
Au Qtr. 3 cr. Prereq: Grad standing in voice or permission of instructor.
715 Structure and Function of the Singing Mechanism  G 3
The structure and function of the singing and breathing mechanisms as they relate to developmental teaching of voice in the formative years. Prereq. Au Qtr. 3 cl. Not open to students with credit for 615.

727 Keyboard Harmony for Graduate Students  G 3
Application of keyboard musicianship, including sight reading, harmonization of melodies, improvisation, transposition, realization of figured bass and modulation. R. Johnson. Au Qtr. 3 cl. Prereq. 264.01, 423, or equiv with written permission of instructor.

740† Studies in Medieval Music  G 4
An introduction to scholarly issues in the music of the Middle Ages. Atkinson. Au Qtr. 2 1½-hr cl. Prereq: 241 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 640.

741† Studies in Renaissance Music  G 4
An introduction to scholarly issues in the music of the Renaissance. Boone. Wi Qtr. 2 1½-hr cl. Prereq: 241 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 641.

742† Studies in Baroque Music  G 4
An introduction to scholarly issues in the music of the Baroque era. Rosow. Sp Qtr. 2 1½-hr cl. Prereq: 242 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 642.

743† Studies in Classic Music  G 4
An introduction to scholarly issues in the music of the classic era. Rosow. Au Qtr. 2 1½-hr cl. Prereq: 242 or equiv; 521 or equiv; grad standing. Not open to students with credit for 643.

744† Studies in Romantic Music  G 4
An introduction to scholarly issues in the music of the romantic era. Ashby. Wi Qtr. 2 1½-hr cl. Prereq: 243 or equiv; 521 or equiv; grad standing. Not open to students with credit for 644.

745† Studies in 20th-Century Music  G 4
An introduction to scholarly issues in the music of the twentieth century. Ashby. Sp Qtr. 2 1½-hr cl. Prereq: 243 or equiv; 521 or 531 or equiv; grad standing. Not open to students with credit for 645.

746† Studies in 19th-Century Russian Music  G 5
An introduction to scholarly issues in 19th-century Russian music. Mazo. Sp Qtr. 2 1½-hr cl. Prereq: Grad standing in music or Slavic. Not open to students with credit for 673.

747† Studies in 20th-Century Russian Music  G 5
An introduction to scholarly issues in 20th-century Russian music. Mazo. Au Qtr. 2 1½-hr cl. Prereq: Grad standing in music or Slavic. Not open to students with credit for 674.

748† Contemporary Art Music Traditions of Africa and the Diaspora  G 5
An examination of selected published and unpublished musical works by contemporary composers of sub-Saharan Africa and of African descent. Au Qtr. 2 1½-hr cl. Prereq: 251 or 672, AfrAm & AST 101, and grad standing in music; or permission of instructor. Not open to students with credit for AfrAm & AST 748. Cross-listed in African-American and African Studies.

752 Performance Literature  G 3
Intensive study of representative literature for the instrument from each style period. Au, Wi, Sp Qtrs. 3 cl. Prereq: Admission to MM curriculum or permission of instructor. Each decimal subdivision repeatable to a maximum of 6 cr hrs.

752.01 Piano
Au, Wi Qtrs.

752.02 Voice
Wi, Sp Qtrs.

752.03 Strings
Au, Wi, Sp Qtrs.

752.04 Woodwinds
Au, Wi Qtrs.

752.05 Brass
Wi Qtr.

752.07† Percussion
Wi, Sp Qtrs.

753† Teaching the Technology-Centered Music Curriculum  G 3
The application of current technology to teaching music concept development in elementary and middle grade schools. Su Qtr. Arr. Prereq: Bachelor's degree in music or music education.

757 Dalcroze Eurhythmics  U G 3
A training in musical rhythm through body experience; eurhythmics is the process of educating the body to internalize rhythmic structures in music and dance. Wi Qtr. 2 1½-hr cl. Open to music, dance, and theatre majors. Repeatable to a maximum of 6 cr hrs.

758† Multicultural Principles and Music Education  G 3
An introduction to current practices in multicultural education with application to music teaching and learning. McCrory. Wi Qtr. 2 1½-hr cl. Prereq: Grad standing or permission of instructor.

759* Teaching Music to Culturally Diverse Learners  G 3
Examination of the importance of music as a cultural indicator in learners' responses to and participation in music. McRary. Wi Qtr. 1 1½-hr cl. Prereq: Grad standing or permission of instructor.

760 Basic Concepts in Music Education  G 3
The principles of music education and of the educational and cultural objectives derived from related disciplines which give direction and purpose to the music education program. Gerber. Au Qtr. 3 cl. Prereq: 586 or 587 or equiv.

761 Principles of Music Learning  G 3
Analysis of the learning process in music as related to problems of music instruction to the public school. Deitzell and McCrory. Sp Qtr. 3 cl. Prereq: 586 or 587 or equiv.

762* Principles and Practices in Elementary School Music  G 3
Analysis and appraisal of the music program in elementary schools including the relationship of music to the total school program. Frego. Sp Qtr. 3 cl. Prereq: 578 or equiv.

763* Literature of Elementary School Music  G 3
A critical study of folk and art music of various cultures and historic periods for the general vocal and listening activities of the integrated curriculum. Frego. Sp Qtr. 3 cl. Prereq: 571 or 578 or equiv.

764* Principles and Practices in Vocal Music Education  G 3
Analysis and appraisal of the organization, purpose, and development of the vocal music program in secondary schools. O'Toole. Sp Qtr. 3 cl. Prereq: 573 or equiv.

765* Literature for Vocal Music Education  G 3
A study of vocal literature of various cultures and historic periods for use with choral groups in the secondary music program. O'Toole. Sp Qtr. 3 cl. Prereq: 575 or equiv.

766* Teaching Practices in General Music  U G 3
Study of current concepts in organizing and teaching general music in the secondary school. Gerber. Wi Qtr. 3 cl. Prereq: 572 or equiv.

767† Teaching Music as a Related Art  U G 3
Study and preparation for teaching music in a multiple arts or humanities context; emphasis on understandings, organization, and techniques essential for interdisciplinary instruction. Gerber. Wi Qtr. 3 cl. Prereq: Course work or background of study and knowledge of another art form.

768† Principles and Practices in Instrumental Music Education  G 3
Role of instrumental music in the public schools; relationship to society and the total music program, historical development, evaluation, and future trends. Sp Qtr. 3 cl. Prereq: 577 or equiv.

769* Literature for Instrumental Music Education  G 3
Relationship of teaching materials and performance repertory to education objectives; selection of literature, interpretation, rehearsal procedures, conducting problems, attainment of musical understanding through literature. Woods. Su (1st term) Qtr. 3 cl. Prereq: 577 or equiv.

770 Introduction to Research in Music Education  G 3
A study of methods of research as applied to problems in school music. Deitzell, Flowers, and Forsythe. Wi Qtr. 3 cl. Prereq: 586 or 587 or equiv.
772* Music in Early Childhood G 3-5
Analysis of research, principles, and practices in early childhood music and application to programs of learning for young children. Flowers.
Sp Qtr. 3 1/2-hr cl. Arr. Prereq: Advanced undergrad standing or above and permission of instructor. For students interested in teaching or research in early childhood music and for experienced personnel in teaching young children.

773* Introduction to Music for Exceptional Learners G 3
Overview of issues, principles, practices, and research related to the music education of exceptional persons. Flowers.
Au Qtr. 1 2/3-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

774* Directive Teaching in Music G 3
Principles and practices of music classroom management; directive teaching emphasizing clarity of objectives, assessment, and systematic instructional procedures for skill and concept teaching. Forsythe.
Su (1st term) Qtr. 2 1/2-hr cl. Prereq: Advanced undergrad standing and permission of instructor.

775* Teaching Music for Exceptional Learners G 3
An analysis and concentrated study of materials and practices appropriate to teaching music for exceptional learners. Flowers.
Sp Qtr. Prereq: Advanced undergrad standing and permission of instructor.

777 Practicum in Teaching Music for Handicapped Learners G 4-10
Assignment to area schools and institutions for observation and music teaching experiences with groups of handicapped learners and cooperating teachers. Flowers.
Su, Au, Wi, Sp Qtrs. 5-15 hrs per wk in schools or institutions. Prereq: Advanced undergrad standing and permission of instructor. Repeatable to a maximum of 10 cr hrs.

780 Ensembles G 1-2
Study and performance of repertoire determined by student's specific ensemble.
2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 24 cr hrs.
780.01 Choral
Au, Wi, Sp Qtrs.
780.02 Orchestral
Haddock.
Au, Wi, Sp Qtrs.
780.03 Band
Au, Wi, Sp Qtrs.
780.04 Chamber and Small Ensembles
Au, Wi, Sp Qtrs.
780.05 Piano Accompanying Practicum
Au, Wi, Sp Qtrs.
780.11 Opera Scenes
A performance ensemble class devoted to the rehearsal and performing of opera scenes; basic rehearsal and performing techniques for operatic literature.
Wi Qtr. 3 1/2-hr cl. Arr. Prereq: 710 or permission of instructor, and admission by audition.
780.12 Opera Performance G 2
A performance ensemble class devoted to the rehearsal and performing of full-length operas. Students will learn advanced rehearsal and performance techniques for operatic literature.
Au, Wi, Sp Qtrs. 5 2/3-hr cl. Prereq: 710 or permission of instructor, and admission by audition.
780.15 Early Music Ensemble
Au, Wi Qtrs.
780.20 African Performing Ensemble G 1
Au, Wi Qtrs. 1.2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs, including or hrs earned in AfrAm/ASST 780.20. Cross-listed in African-American and African Studies.
780.21 Slavic Performing Ensemble
Wi, Sp Qtrs.

H783 Honors Research U 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC or College of Arts or College of Education Honors Committee approval of project, a minimum 3.50 phr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

786 Music Research Methods and Bibliography G 3
Survey of the methods and materials for conducting research projects in today's interdisciplinary computerized environment. Heck.
Au Qtr. 3 cl. Prereq: Grad standing in music.

789 Performance Practices in Sub-Saharan African Music G 3
An examination of compositional choices and performance conventions in selected musical traditions from sub-Saharan Africa.
Au Qtr. 2 1/3-hr cl. Prereq: Grad standing in music and one of the following courses or equiv: AfrAm/ASST 101, or Music 251 or 672; or permission of instructor. Not open to students with credit for AfrAm/ASST 789. Cross-listed in African-American and African Studies.

790 Problems in Vocal Music Education G 1-5
Study of problems encountered in the teaching and supervising of vocal music.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

791 Problems in Instrumental Music Education G 1-5
Study of problems encountered in teaching, supervising, and organization of the instrumental music program.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

792 Choral Problems G 1-5
Study of the problems encountered in developing choruses and church choirs. Apfelstien and O'Toole.
Su (1st term), Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

801 Applied Music (Principal) G 2 or 4
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature.
Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Each decimal subdivision repeatable to a maximum of 16 cr hrs.
801.11 Piano
801.21 Voice
801.31 Violin
801.32 Viola
801.33 Cello
801.34 Double Bass
801.41 Flute
801.42 Oboe
801.43 Clarinet
801.44 Bass Clarinet
801.45 Saxophone
801.46 Bassoon
801.51 Horn
801.52 Trumpet
801.53 Trombone
801.54 Euphonium
801.55 Tuba
801.71 Percussion

802 Applied Music (Major) G 2 or 4
A specialized and intense study of literature and techniques of performance.
Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam. Each decimal subdivision repeatable to a maximum of 16 cr hrs.
802.11 Piano
802.21 Voice
802.31 Violin
802.32 Violas
802.33 Cello
802.34 Double Bass
802.41 Flute
802.42 Oboe
802.43 Clarinet
802.44 Bass Clarinet
802.45 Saxophone
802.46 Bassoon
802.51 Horn
802.52 Trumpet
802.53 Trombone
802.54 Euphonium
802.55 Tuba
802.71 Percussion

803 Conducting G 4
A specialized and intense study of conducting techniques.
Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lab. Prereq: Placement exam. Open only to conducting majors in the MM curriculum. Each decimal subdivision repeatable to a maximum of 12 cr hrs.
772* Music in Early Childhood U G 3-5
Analysis of research, principles, and practices in early childhood music and application to programs of learning for young children. Flowers.
Sp Qtr. 2 1/2-hr cl. Arr. Prereq: Advanced undergraduate standing or above and permission of instructor. For students interested in teaching or research in early childhood music and for experienced personnel in teaching young children.

773* Introduction to Music for Exceptional Learners G 3
Overview of issues, principles, practices, and research related to the music education of exceptional persons. Flowers.
Au Qtr. 1 1/2-hr cl. Prereq: Advanced undergraduate standing and permission of instructor.

774* Directive Teaching in Music G 3
Principles and practices of music classroom management; directive teaching emphasizing clarity of objectives, assessment, and systematic instructional procedures for skill and concept teaching. Forsythe.
Su (1st term) Qtr. 1 2 1/2-hr cl. Prereq: Advanced undergraduate standing and permission of instructor.

775* Teaching Music for Exceptional Learners G 3
An analysis and concentrated study of materials and practices appropriate to teaching music for exceptional learners. Flowers.
Sp Qtr. Prereq: Advanced undergraduate standing and permission of instructor.

777 Practicum in Teaching Music for Handicapped Learners U G 4-10
Assignment to area schools and institutions for observation and music teaching experiences with groups of handicapped learners and cooperating teachers. Flowers.
Su, Au, Wi, Sp Qtrs. 5-15 hrs per wk in schools or institutions. Prereq: Advanced undergraduate standing and permission of instructor. Repeatable to a maximum of 10 cr hrs.

780 Ensembles G 1-2
Study and performance of repertoire determined by student's specific ensemble.
2 or more hrs rehearsal each wk. Prereq: Admission by audition and permission of instructor. Repeatable to a maximum of 24 cr hrs.
780.01 Choral
Au, Wi, Sp Qtrs.
780.02 Orchestral
Haddock.
Au, Wi, Sp Qtrs.
780.03 Band
Au, Wi, Sp Qtrs.
780.04 Chamber and Small Ensembles
Au, Wi, Sp Qtrs.
780.05 Piano Accompanying Practicum
Au, Wi, Sp Qtrs.
780.11 Opera Scenes
A performance ensemble class devoted to the rehearsing and performing of opera scenes; basic rehearsal and performing techniques for operatic literature.
Wi Qtr. 3 1 1/2-hr cl. Arr. Prereq: 710 or permission of instructor, and admission by audition.
780.12 Opera Performance G 2
A performance ensemble class devoted to the rehearsing and performance of full-length operas. Students will learn advanced rehearsal and performance techniques for operatic literature.
Au, Wi, Sp Qtrs. 5 2 1/2-hr cl. Prereq: 710 or permission of instructor, and admission by audition.
780.15 Early Music Ensemble
Au, Wi Qtrs.
780.20 African Performing Ensemble G 1
Au, Wi Qtrs. 1 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs, including cr hrs earned in AAm&ASit 780.20. Cross-listed in African-American and African Studies.
780.21 Slavic Performing Ensemble
Wi, Sp Qtrs.

H783 Honors Research U 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC or College of the Arts or College of Education Honors Committee approval of project, a minimum 3.50 pt/hr ratio in the field of distinction, sr standing, and CPHR commencement with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

786 Music Research Methods and Bibliography G 3
Survey of the methods and materials for conducting research projects in today’s interdisciplinary computerized environment. Heck.
Au Qtr. 3 cl. Prereq: Grad standing in music.

789 Performance Practices in Sub-Saharan African Music G 3
An examination of compositional choices and performance conventions in selected musical traditions from Sub-Saharan Africa.
Au Qtr. 2 1/2-hr cl. Prereq: Grad standing in music and one of the following courses or equiv: AAm&ASit 101, or Music 231 or 672; or permission of instructor. Not open to students with credit for AAm&ASit 789. Cross-listed in African-American and African Studies.

790 Problems in Vocal Music Education U G 1-5
Study of problems encountered in the teaching and supervising of vocal music.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

791 Problems in Instrumental Music Education U G 1-5
Study of problems encountered in teaching, supervising, and organization of the instrumental music program.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs.

792 Choral Problems U G 1-5
Study of the problems encountered in developing choruses and church choirs. Apfelstedt and O'Toole.
Su (1st term), Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 10 cr hrs.

801 Applied Music (Principal) G 2 or 4
Advanced applied music study with emphasis on musicianship, pedagogical techniques, and literature.
Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam or permission of applied area faculty. Open to other qualified students within the limits of instructional facilities by permission of director of School of Music. Each decimal subdivision repeatable to a maximum of 16 cr hrs.
801.11 Piano
801.21 Voice
801.31 Violin
801.32 Viola
801.33 Cello
801.34 Double Bass
801.41 Flute
801.42 Oboe
801.43 Clarinet
801.44 Bass Clarinet
801.45 Saxophone
801.46 Bassoon
801.51 Horn
801.52 Trumpet
801.53 Trombone
801.54 Euphonium
801.55 Tuba
801.71 Percussion

802 Applied Music (Major) G 2 or 4
A specialized and intensive study of literature and techniques of performance.
Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl arr. Prereq: Placement exam. Each decimal subdivision repeatable to a maximum of 16 cr hrs.
802.11 Piano
802.21 Voice
802.31 Violin
802.32 Viola
802.33 Cello
802.34 Double Bass
802.41 Flute
802.42 Oboe
802.43 Clarinet
802.44 Bass Clarinet
802.45 Saxophone
802.46 Bassoon
802.51 Horn
802.52 Trumpet
802.53 Trombone
802.54 Euphonium
802.55 Tuba
802.71 Percussion

803 Conducting G 4
A specialized and intensive study of conducting techniques.
Au, Wi, Sp Qtrs. 3 cl, 1 1-hr lab. Prereq: Placement exam. Open only to conducting majors in the MM curriculum. Each decimal subdivision repeatable to a maximum of 12 cr hrs.
803.01 Choral.  
Apfelstadt and Gallagher.

803.03 Band  
Biatti and Lewis.

810 Music Pedagogy G 2  
A critical analysis of various methods, principles, practices, and materials current in teaching applied music.

810.211* Vocal  
An analysis of the principles and practices current in the teaching of voice. Peeler.
Wk Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in voice.

810.221* Vocal Practicum  
Observation of applied voice instruction, participation in and discussion of voice teaching, development of teaching skills and fluency of communications. Peeler.
Sp Qtr. 2 hrs arr. Prereq: 615. Repeatable to a maximum of 6 cr hrs.

810.301* String Instrument  
An analysis of the principles and practices current in the teaching of strings. Gillespie.
Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in string instruments.

810.401* Woodwind Instrument  
An analysis of the principles and practices current in the teaching of woodwinds. Wealt.
Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in woodwind instruments.

810.501* Brass Instrument  
An analysis of the principles and practices current in the teaching of brass instruments. Waddell.
Sp Qtr. 5 cl. Prereq: Music grad standing and minimum of 6 cr hrs of applied study in brass instruments.

810.701* Percussion Instruments  
An analysis of principles and practices in the teaching of percussion instruments. Bump.
Au Qtr. 3 cl. Prereq: Music grad standing and a minimum of 6 cr hrs of applied study in percussion instruments, or permission of instructor.

815* Clinical Assessment and Training Methods for the Singing Voice G 3  
An interdisciplinary course in vocal pedagogy and speech-language pathology which explores methods within each discipline for assessing and training the singing voice.
Sp Qtr. 2 cl. 2 lab hrs. Prereq: Grad standing in music or sp/hrng (with credit for 741); or permission of instructor. Not open to students with credit for Sp/Hrng 915. Cross-listed in Speech and Hearing Science.

818 Theories of Heinrich Schenker  
818.01* Foundations G 3  
Musical structural analysis of Schenker as expressed in his own writings; emphasis on his theories rather than on graphing techniques.  
Au Qtr. 3 cl. Prereq: 621 or 622 or 623. Not open to students with credit for 818.

818.021* Analysis Practicum G 5  
Analysis of tonal music strictly following the theories and graphic notational conventions of Heinrich Schenker.  
Wk Qtr. 2 1 1/2-hr cl. Prereq: 818.01 and grad standing in music.

819* Levels Theory after Schenker G 3  
Concentration on specific concepts of commentators and successors as distinct from Schenker's.
Sp Qtr. 3 cl. Prereq: 818. Not open to students with credit for 729.

820 Music Theory G 3  
820.01 Pedagogy  
The teaching of music theory in colleges and secondary schools.  
Au Qtr. 3 cl. Prereq: Music grad standing. Not open to students with credit for 620.

820.02* Teaching Practicum  
Evaluation and application of the most effective teaching methods and principles in teaching music theory.
Sp Qtr. 2 1 1/2-hr cl. Prereq: 820.01 or equiv.

823* Seminar: Atonal Theory G 5  
A study of atonal set theory and serial theory as developed by Babbitt, Forte, Lewin, Rahn, and others.
Sp Qtr. 2 1 1/2-hr cl. Prereq: 623 or permission of instructor.

824 Computer Applications in Music Research and Instruction G 5  
2 1 1/2-hr cl.

824.01* Computer Applications in Music Research and Instruction I  
The use of computers in music research and instruction; music data structures and programming routines for music research and instruction. Blombach.
Au Qtr. Prereq: 621, 622, or 623, or equiv or permission of instructor. Not open to students with credit for 824.

824.02* Computer Applications in Music Research and Instruction II  
Complex music data structures and programming routines for music research and instruction. Blombach.
Wk Qtr. Prereq: 824, 824.01, or equiv. Not open to students with credit for 825.

825* Advanced Computer Applications in Music Research G 3  
The use of advanced computer programming techniques for research in music. Blombach.
Sp Qtr. 2 cl. Prereq: 824.02. Repeatable to a maximum of 6 cr hrs.

826 Development of Music Theory I G 5  
A study of the principal treatises on music theory before 1400. Green.
Au Qtr. 3 cl.

827 Development of Music Theory II G 5  
A study of the principal treatises on music theory from 1400 to 1700. Green.
Wk Qtr. 3 cl.

828 Development of Music Theory III G 5  
Critical study of music and theory texts from 1700 to 1900. Green.
Sp Qtr. 3 cl.

829 Seminar: Contemporary Theories of Music G 3-5  
Critical examination of major contemporary theoretical viewpoints; concepts of theory construction; topics will vary each quarter offered.
Wk Qtr. 2 1 1/2-hr cl. Prereq: Music grad standing. Repeatable to a maximum of 20 cr hrs.

831* Advanced Studies in Counterpoint G 3  
Advanced counterpoint based on the polyphonic style of the 18th century; analysis and stylistic writing, including study of fugues, canons, and invertible counterpoint.
Sp Qtr. 3 cl. Prereq: 631.

835 Composition III G 3-5  
Creative writing at an advanced level.
Su, Au, Wk, Sp Qtr. Prereq: 2 qtrs of 635 or equiv. Repeatable to a maximum of 20 cr hrs.

837 Composition with Electronic Media II G 3-5  
Advanced composition using electronically generated sound material. Wells.
Su, Au, Wk, Sp Qtrs. 15 cl. Prereq: 837. Repeatable to a maximum of 15 cr hrs.

838 Seminar in Music Perception G 5  
Investigation and application of experimental techniques for measuring music perception and musical behavior, including a critical survey of recent experimental literature. Huron.
Sp Qtr. 3 1-hr cl. Prereq: Permission of instructor.

839 Research Practicum in Music Perception G 3  
Supervised research in music perception with review of relevant theoretical and methodological literature. Huron.
Au, Wk, Sp Qtrs. Prereq: 838. Repeatable to a maximum of 6 cr hrs.

847* Development of Notation: 900-1600 G 5  
A survey of notational principles from Gregorian neumes through the mensural system of the Renaissance, with exercises in transcription. Atkinson.
Wk Qtr. 3 cl. Prereq. or concn: 640.

850* History of Performance Practices G 5  
A study of primary sources pertaining to contemporary attitudes and practices in the performance of music from the Middle Ages to the present. Atkinson.
Au Qtr. 3 cl.

851* Musical Sources and Historiography G 5  
A study of music historiography, supplemented by the examination of musical documents from each of the periods of music history.
Sp Qtr. 3 cl. Prereq: 786.
852 Performance Literature G 3
Concentrated study of representative literature from each style period.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 762 and admission to DMA program.
Repeatable to a maximum of 9 cr hrs.
852.01 Piano
852.02 Voice
852.03 Strings
852.04* Woodwinds
852.05* Brass

860 Conducting Repertoire G 3
Au, Wi, Sp Qtrs. 2 2-hr cl. Open only to DMA conducting majors or PhD students or by permission of instructor.
860.01 Band
Concentrated study of instrumentation and repertoire of bands in Western music from the standpoint of the conductor.
860.02 Choral
Concentrated study of choral literature from the Renaissance to the present.
860.03 Orchestral
Concentrated study of orchestral repertoire from Monteverdi through the present from the standpoint of the conductor.
874* Seminar: The Development of Music Education G 3 or 5
The development of music education from the early Greek society to the present day tracing major trends and the influence of certain persons. Gillespie.
Sp Qtr. 3 or 5 cr. Prereq: Written permission of instructor.

875* Seminar: Psychological Factors in Music Education G 3 or 5
A study of the psychological factors, theory, and research in the musical development of children and adolescents with implications for school music education programs. Forsythe.
Au Qtr. 3 or 5 cr. Prereq: 761.

876* Seminar: Evaluation and Measurement in Music Education G 3 or 5
A study of the theory, principles, and techniques of evaluation and measurement in music education. Flowers.
Au Qtr. 3 or 5 cr. Prereq. 761 and Psych 510.

877* Seminar: Social Factors in Music Education G 3 or 5
A study of the social influences on music education and their relationship to school music programs and practices.
Wi Qtr. 3 or 5 cr. Prereq. 760.

879* Seminar: Music in Higher Education G 3 or 5
The role of music in higher education historically and in contemporary times, including its philosophical bases, degree programs, and organizations.
Wi Qtr. 3 or 5 cr.

885* Fieldwork in Ethnomusicology G 5
A study of the theory and practice of ethnomusicological fieldwork.
Sp Qtr. 2 1 1/2-hr cl.

886* Theories and Methods of Ethnomusicology G 5
A study of scholarly approaches and research methods in ethnomusicology.
Wi Qtr. 2 1 1/2-hr cl.

888* Topics in Russian Music G 5
Selected problems in 19th- and 20th-century Russian music. Mazo.
2 1 1/2-hr cl. Prereq: Grad standing in music or Slavic. Not open to students with credit for 788. Repeatable to a maximum of 15 cr hrs.

893 Individual Studies G 1-5
Individual research projects not connected with the dissertation.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

894 Group Studies G 3-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs.

894.01 Seminar in Music Theory
894.02 Seminar in Music Education

902 Applied Music (Major) G 2 or 4
Advanced study of music literature in performance including concert recital presentation.
Su, Au, Wi, Sp Qtrs. 1 1-hr lesson, studio cl or arr. Prereq: Placement exam. Open only to students admitted to DMA program. Each decimal subdivision repeatable to a maximum of 32 cr hrs.
902.11 Piano
902.21 Voice
902.31 Violin
902.32 Viola

902.33 Cello
902.34 Double Bass
902.41 Flute
902.42 Oboe
902.43 Clarinet
902.44 Bass Clarinet
902.45 Saxophone
902.46 Bassoon
902.51 Horn
902.52 Trumpet
902.53 Trombone
902.55 Tuba
902.71 Percussion

903 Advanced Conducting G 4
Study of advanced conducting technique and application to appropriate repertoire.
Au, Wi, Sp Qtrs. Arr. Prereq: Acceptance into the DMA conducting program. Each decimal subdivision repeatable to a maximum of 8 cr hrs.

903.01 Band/Winds
903.02 Choral
903.03 Orchestral

950 Topical Research Seminar G 3-5
Research topic to be announced.
950.01 Seminar in Musicology G 5
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. Repeatable to a maximum of 45 cr hrs.

995 Advanced Research Practicum G 1-5
Utilization of research processes and creative techniques appropriate to the field of inquiry—analysis, survey, experimentation, historiography, philosophy. Flowers and Forsythe.
Su, Au, Wi, Sp Qtrs. Prereq: 45 grad cr hrs and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

998 Research in Music: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research in Music: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Natural Resources
210 Kottman Hall, 2021 Coffey Road, 292-2265
100 Environmental Science and Management U 4
Introduction to environmental science, major environmental problems, and related technical and socio-economic issues. Davis and Wali.
Au, Wi Qtrs. 4 cl.

189 Work Experience in Natural Resources U 2
Student must secure approval of instructor prior to employment (equivalent to 10 weeks full-time) and submit an evaluation by third Friday of quarter following work.
Su, Au, Wi, Sp Qtrs. Equiv of 10 wks employment. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

203 Society and Natural Resources U 5
Introduction to interactions between humans, natural resources, and ecosystems from a social science perspective.
Sp Qtr. 3 1-hr cl, 2 dis. Prereq: 201.

222 Natural Resources Data Analysis U 5
Natural resources applications of statistics to land management.
Au, Wi, Sp Qtrs. 4 cl, 1 3-hr lab. GEC course.

332 Landscape Maintenance U 4
Management of landscape plantings with special emphasis on transplanting, mulching, nutrition, pest control, pruning, physiological disorders and diagnosing plant problems. Sydnor.
Wi Qtr. 2 2-hr cl. Not open to students with credit for Hort 232. Cross-listed in Horticulture.

289 Natural Resources Practicum U 2
Experience in the application of principles and techniques of environmental/natural resources problem solving.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in the School of Natural Resources and permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.
320 Management of Fisheries U 3
Fisheries resource management problems and programs including biological, economic, and social factors of local, national, and international importance. Johnson.
Au, Wi Qtr. 3 cl. Prereq or concour: 200.

321 Principles of Wildlife Management U 3
Principles of wildlife management as derived from history and ecology. Townsend
Au Qtr. 3 cl. Prereq or concour: 200 and jr standing.

324 Natural Resources Photointerpretation U 3
Principles and methods of photointerpretation for natural resources management.
Wi Qtr. 2, 1-3hr, lab. Not open to students with credit for 324.

340 Concepts of Parks and Recreation U 3
Examination of parks and recreation concepts including development, rationale, and frameworks for park and recreation systems in the United States. Douglass.
Wi Qtr. 3 cl.

355 Water Quality Management U 3
Causes, consequences, and solutions of pollution in lakes, rivers, wetlands, and groundwater; analysis of the physical, chemical, and biological indicators of water quality. Mitsch and Traina
Au, Sp Qtr. 1-3hr cl. Prereq: 100 and 200 or concour.

367 The Making and Meaning of the American Landscape U 5
Interpretation of the contemporary American landscape as the product of many interacting physical and sociocultural forces. Niemi, Wi, Sp Qtr. 3 cl, 2-1hr rec. Prereq: English 110 or 111 or equiv. Not open to students with credit for Larch 202 or 367. Cross-listed in Landscape Architecture. VPA Adms Cond course. GEC second writing course (and arts and hums cultures and ideas BS only).

400 Natural Resources Policy U 5
Conceptual and historic development, implementation, and evaluation of resource policy. Wi, Sp Qtr. 4, 1 rec. Prereq: 100 and Ag Econ 200 or Econ 200 or equiv. BER, GEC, GEC/LAR course.

448 Natural Resources Law Enforcement U 4
An examination of the law enforcement function in natural resources and recreation management. Prerequisite for acceptance to the Natural Resources Ranger Academy program. Giese and Dudd.
Sp Qtr. 1-4hr cl. Prereq: 100 and 140 or permission of instructor.

498 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Su, Au, Sp, Wi Qtr. Prereq: Permission of instructor. Repeatable for different title study tours only.

498.01 Domestic

498.02 Foreign

510 Natural History of Ohio U 5
Field course emphasizing inter-relationship among physical and biological factors in various ecological settings; field techniques and identification skills used for research paper; teacher section offered.
Sp Qtr. 2, 1-2hr cl and Sat field trip.

522 Wildlife Identification and Management U 3
Characteristics, life histories, and management systems for the major North American game wildlife. Townsend.
Wi Qtr. 2 2-2hr cl. Prereq: 321 or equiv.

523 Management of Wildlife Habitat U 3
Principles and practices of ecosystem conservation and manipulation for game, non-game, and endangered wildlife. Townsend.
Wi Qtr. 3 1-3hr cl. Prereq: 321 or equiv.

531 Environmental and Natural Resources Economics U 5
Economic analysis of private and public decisions regarding interactions with the natural environment. Au, Sp Qtr. 5 cl. Not open to students with credit for Agr Econ 531. Cross-listed in Agricultural Economics.

540 Principles of Park and Recreation Management U 5
Structure and behavior of outdoor recreation land management concepts for public programs at state, regional, and national levels of government. Andrew.
Wi Qtr. 5 cl. Prereq: 200, or equiv with permission of instructor.

541 Recreation Resources Program Planning U 5
Analysis of recreation resources, uses, and suppliers in establishing goals, objectives, and actions for recreation programs; scheduling and program budgeting for recreation opportunities. Heywood.
Au Qtr. 6 cl, and 1 1-day field trip. Prereq: 340.

567 Communicating Environmental and Natural Resources Information U 5
Concepts, skills development, and practice in accessing and communicating information about the environment and natural resources to varied audiences; emphasis on written and oral communication. Niemi, Wi, Sp Qtr. 3, 2-1hr cl. Prereq: Second writing course and 15 or hrs of nat res course work, or equivs. Not open to students with credit for 410. GEC, GEC/LAR course.

H599 Honors Colloquium U 2
Instruction in the preparation of research proposals and discussion of current research in natural resources.
Wi Qtr. 1-2 hr cl. Prereq: Jr standing in NRE honors program. Required of all NRE honors students. This course is graded S/U.

597 Issues of the Contemporary World U 5
Prereq: Sr standing. GEC, GEC/LAR courses.

597.02 Antarctic Marine Ecology and Policy U 5
Historical and contemporary evaluation of Antarctic resource management and its scientific basis. Au or Wi or Sp Qtr. 3 1-1/2hr cl. H597.02 (honors) may be available to students enrolled in an honors program or by permission of instructor.
Prereq: Sr standing. Prereq for H597.02: Sr standing and enrollment in an honors program. Not open to students with credit for Int Std 597.02 or Zoology 597.02. Cross-listed in International Studies.

598 Natural Resources Management Study Tour U 2-5
Analysis and comparative studies of natural resources management program through on-site visits and interaction with professional managers. Au, Wi, Sp Qtr. 1-2hr cl; field study tour. Prereq: Jr standing. Repeatable to a maximum of 10 cr hrs. Travel and subsistence costs will be borne by the student.

596 Natural Resources Management U 5
Integration of technical knowledge with social and institutional constraints as they relate to professions in resources management. Douglass, Nichols, Miller.
Au, Sp Wi Qtr. 5 cl. Prereq: Sr standing and permission of instructor.

607 Fundamentals of Geographic Information Systems U 4
Basic principles of geographic and land information systems and their use in spatial analysis and information management. Wi Qtr. 3 cl, 1-3 hr lab. Prereq: Sr standing. Not open to students with credit for Geog 385; or 607 in C&RP Plan, Civil En, Geo Sci, Geog, or Geol Sci. Cross-listed in City and Regional Planning, Civil Engineering, Geodetic Science, Geography, and Geological Sciences.

610 Environmental Interpretation and Visitor Services U 5
Principles and practice in communicating with visitors in leisure and non-formal education settings.
Wi Qtr. 5 1-3hr cl, 3 independent off-campus site visits and 1-2 day trip.
Prereq: 567 or equiv. Not open to students with credit for 511.

611* Great Lakes Education Workshop U 1-4
Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and nonformal education settings. Fortner.
Su, Au, Wi, Sp Qtr. 10 course hrs per cr hr, field trip. Prereq: Teaching certificate or or standing. Repeatable to a maximum of 2 cr hrs. Offered frequently off-campus on request. Cross-listed with Educational Studies.

613 Methods for Conservation Education U 3
Experience centered course for conservation/natural resources education including objectives, instructional, and evaluative procedures appropriate to formal and non-formal settings. Roth.
Sp Qtr. 3 3hr cl. Prereq: Sr or grad standing. Not open to students with credit for Ed-Sci&M& 613. Cross-listed in Education: Science and Mathematics.

614* Marine and Aquatic Education U 3
Overview of oceanic and Great Lakes resources, their roles in history, climate, commerce, and culture; examination of teaching materials for formal and informal settings. Fortner.
Su, Wi Qtr. 1-3hr cl, field trip. Prereq: 20 or hrs of social, physical, and/or biological sciences or teacher certification, and permission of instructor.
Not open to students with credit for Ed-Sci&M& 614. Cross-listed with Educational Studies. Travel and subsistence costs for winter field trip must be borne by students. Summer offering at Stony Lab.

615 Skills for Environmental Communication U 5
Skills development and practice in communicating natural resource/ environmental information through written and broadcast media. Fortner.
Wi Qtr. 3 2-2 hr cl. Prereq: 567 or grad standing.
618 Environmental Pollution U G 4
Problems, principles, causes, and control of pollution in the local, regional, and global environment; quantitative approaches to environmental problems in air, water, and land systems. Mitsch.
Wi Qtr. 4 cl. Prereq: Sir standing and 15 hrs of natural sciences. Not open to students with credit for Civil En 618; Mech Eng 618; or Zoology 618. Cross-listed in Civil Engineering.

626 Field Techniques in Fisheries Management U G 5
Methods of sampling, evaluation, and managing freshwater fish populations; techniques are compared and related problems discussed; actual field experience. Johnson.
Au Qtr. 3 cl, 1 4-hr lab 4 overnight field trips. Prereq: 320.

628 Introduction to Aquaculture U G 5
An introduction to the physical, biological, and economic factors that influence the development of fish culture systems; current US hatchery practices will be compared with methods used elsewhere in the world. Dabrowski.
Wi Qtr. 3 cl, 4-hrs lab. Prereq: 320.

631 Arboriculture U G 5
Integration of environmental factors and culture practices necessary to establish, grow, and maintain plant function in the landscape in an ethical, cost effective manner. Synder.
Au Qtr. 4 cl, 1 2-hr lab. Prereq: Forestry 221 or Hort 234 or 435 and a 400 level course in Entomol or Pint Path. Not open to students with credit for Hort 631. This course is available for EM credit.

635 Forest Management U G 5
Application of economic and planning principles to address natural resource management issues and problems; use of computer-based mathematical programming, simulation, and forest-wide planning models. Nichols.
Sp Qtr. 5 cl. Prereq: Written permission of instructor. Required of forestry majors.

642 Park Administration U G 3
Organization and administration of parks and associated recreation areas and activities. Douglass.
Sp Qtr. 3 cl.

643 Outdoor Recreation and Tourism by the Private Sector U G 4
Factors influencing supply and demand for outdoor recreation and tourism facilities provided by the private sector; the feasibility study, liability, insurance, and other managerial concerns. Andrew.
Sp Qtr. 4 cl. Prereq: 540 and Econ 200 or equiv.

644 Park Design U G 5
Interrelationship of facility design and recreation land management, including various types of parks and criteria for their location and design. Heywood.
Sp Qtr. 6 cl. Prereq: 541.

547 Wilderness Policy and Management U G 4
Detailed study of policy processes, planning procedures, designation mechanics, utilization issues, and management programs for wilderness resources. Andrew.
Wi Qtr. 4 cl. Prereq: 321 and 400 or 540 or equiv with permission of instructor.

550 Water Resources Institutions and Policies U G 5
Review and advanced analysis of Ohio, interstate, and federal institutions and policies which influence the use and management of water resources. Vartrees.
Sp Qtr. 2 2-hr, 1 1-hr cl arr. Prereq or concour: 400 or permission of instructor.

553 Solid Waste Management U G 5
Overview of the management of solid waste examination of policy, alternative strategies, and hierarchical decision-making. Heinrich.
Sp Qtr. 2 2½-hr cl. Prereq: 500. Field trips required.

566 Ecosystems of the World: Temperate, Boreal and High Latitude Ecosystems U G 5
Intermediate course in ecology emphasizing structure-function relations at broad scales, incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems. Walt/Boerner.
Wi Qtr. 1 2-hr cl and 2 1½-hr cl. Prereq: Sr or grad standing; Plant Biology 413.01 or Zoology 413.01 or equiv; and 20 additional hrs in natural science or natural resources or permission of instructor. Not open to students with credit for Plant Biology 656. Cross-listed in Plant Biology.

662 Wildlife Management Methods U G 5
Methods used by professional wildlife managers to assess population characteristics of wild animals. Townsend.
Sp Qtr. 3 cl, 2 2-hr labs, Sat field trips. Prereq: 222 or equiv, 321, 523, Zoology 413.01 or permission of instructor. Not open to students with credit for Zoology 662. Students will normally be wildlife management majors.

675 Fate of Pollutants in Soils and Natural Waters U G 3
Overview of source, modes of introduction, modes of transport, chemical and biological fate, and environmental impact of pollutants in soil-water environments. Traina.
Au Qtr. 2 1½-hr cl. Prereq: Two qtrs of chemistry and one qtr of biology or pint bio. Not open to students with credit for Agronomy 675.

684 Internships in Natural Resources Professions U G 0
Internship (equivalent to 10 weeks of full-time employment) in natural resources professions arranged with cooperating natural resources or environmental agencies, organizations or industries.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in the School of Natural Resources and permission of instructor. Repeatable to a maximum of 6 quarters. This course is graded S/U.

689 Professional Practice in Natural Resources U G 4
Preparation of a written report and delivery of a presentation based on internship employment in natural resources professions.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 684 and permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

690 Workshop in Environmental Education U G 3
Problems of instruction in environmental education with consideration of both traditional approaches and current developments in content and methodology.
Su, Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

691 Workshop in Environmental Management Education U G 1-2
Identification of environmental problems and management alternatives with emphasis on related education and communications techniques; survey of related research; development of applied educational and communications strategies.
Arr. Prereq: Permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

693 Individual Studies in Natural Resources U G 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs. These courses are graded S/U.

694 Group Studies U G 2-5
Group studies on the nature and management of natural resources encompassed in one of the following areas.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs for each subdivision.

700 Natural Resources Policy Analysis U G 5
Frameworks of planning and analyzing contemporary natural resources policies; instructor and student critiques of legislation, forecasts, plans, and policy analyses. Vertrees.
Au Qtr. 2 2½-hr cl. Prereq: 400 with permission of instructor or grad standing.

715 Community Education for Environmental Issues U G 3
Seminar study in activism, mass/group movements, and education for reempowerment/intervention with emphasis on community environmental issues. Heinrich.
Su Qtr. 1 3-hr cl. Prereq: Sr or grad standing. Maximum enrollment of 25. Experiential learning methods.

716 Choices for the Environment U G 3
Exploration of the process of information flow leading to individual decision-making and educating on environmental issues. Heinrich.
Au Qtr. 1 3-hr cl. Prereq: Jr or sr or grad standing. Experiential based learning course.

725 Wetland Ecology and Management U G 5
Biological, physical, chemical, and ecological aspects of major wetland ecosystems in North America; validation, classification, and management of wetlands for biotic resources and water management. Mitsch.
Au Qtr. 1 5-hr cl, field trips. Prereq: Zoology 413.01 or permission of instructor.

731* Ecological Relationships of Forest Stands U G 3
Ecological and physiological aspects of the forest-soil-surface complex as it relates to forest tree establishment and growth.
Sp Qtr. 1 cl, 2 hrs arr.
733 Successional Dynamics of Forests U G 5
Analysis of past development of forest stands; examination of major processes causing changes over time in communities of trees. Hix.
Wi Qtr (Odd years), 2 cl, 4-hr lab, and arranged 1 or 2 all-day field trips. Prereq: Sr or grad standing; permission of instructor.

750 Resolving Social Conflict G 4
A multidisciplinary examination of social conflict, its dynamics, and its negotiated and constitutional resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts. Davis and Epstein.
Au Qtr. 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and City and Regional Planning.

752 Environmental Science and Law U G 4
Introduction to the common and statutory law and administration of environmental protection, with special emphasis on scientific and technological aspects.
Au Qtr. 2 2-hr cl. Prereq: Grad or jr or sr standing. Not open for credit applicable to the JD degree. Epstein.

756 Rehabilitation/Restoration of Ecosystems U G 3
Intermediate-level course dealing with ecosystems drastically disturbed by human impacts and strategies employed to rehabilitate and restore them for long-term biological productivity and use. Wall.
Au Qtr. 2 1½-hr cl. Prereq: Sr or grad standing. 100, 200 and 20 additional hrs in natural resources or natural science; or permission of instructor.

760 Ecosystem Modeling U G 5
Development and simulation of ecological models for natural resources/ ecosystem management; conceptual and symbolic models, simulation techniques on main frame and microcomputers. Mitsch.
Wi Qtr. 5 cl. Arr. Prereq: Math 151 and Zoology 413:01 or equiv.

780 Characteristics, Management, and Environmental Impact of Organic Wastes U G 3
Survey of organic wastes; their production, characteristics, treatment, utilization, environmental impact, and regulation. Logan.
Wi Qtr. 2 1½-hr cl. Prereq: Sr or grad standing and at least 20 hrs of chemistry and biology. Not open to students with credit for Agronomy 790.

795 Parks and Recreation Research Seminar U G 2
Presentation, evaluation, and discussion of current parks and recreation research and research needs. Christensen.
Wi Qtr. 1 2-hr cl. Prereq: Grad standing or honors students in parks and recreation administration. Repeatable to a maximum of 4 cr hrs.

797 Interdepartmental Seminar U G 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.
Su, Au, Wi, Sp Qtrs.

798 Current Topics in Environmental Science and Engineering U G 1
Seminar course which presents current research findings on environmental quality and pollution control.
Au, Sp. Qtr. 1 cl. Prereq: Grad standing in eng, sci, nat res, agr; or permission of instructor. Not available for simultaneous credit as Civil En 798. Repeatable to a maximum of 3 cr hrs. Cross-listed in Civil Engineering.

800 Research in Natural Resources G 2
The use of science and research to address natural resource problems; development of a thesis proposal. Roth and Heywood.
Au Qtr. 1 2-hr cl. Prereq: Grad standing.

810 Case Studies and Evaluation of Environmental Communication G 5
Case studies of effectiveness of environmental communication and practice in evaluation of various communication techniques associated with a current environmental issue. Forner.
Au Qtr. 1 3-hr cl. Prereq: Grad standing.

811 Program Development in Environmental Education G 3
Environmental education theory and program development with application to participant's academic/professional specializations. Roth.
Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

817 Applied Mathematical Ecology G 5
Application of the method of mathematical ecology to problems of environmental engineering.
Au Qtr. 5 cl. Prereq: Permission of instructor. Not open to students with credit for Civil En 885L or 817. Cross-listed with Civil En 817.

819 Environmental Interpretive Research and Theory G 5
Analysis of theoretical basis for environmental resources information and education programming. Mullins.
Wi Qtr. 1 3-hr cl; 2 hrs arr. Prereq: Grad standing.

840* Policies Relating to Governmental Recreation Areas G 3
Organizational policies and structures relating to federal, state, and local governmental agencies. Douglass and Heywood.
Wi Qtr. 3 cl. Prereq: 540, and 642 or 643, or 644, or equiv with permission of instructor.

841* Outdoor Recreation Behavior G 3
Analysis of theories related to understanding outdoor recreation behavior of individuals, social groups, and societal aggregations, and implications for managing recreation settings.
Wi Qtr. 2 1½-hr cl. Prereq: Grad standing or permission of instructor.

861 Geographic Information System Institutions G 4
Institutional, legal, economic, and social aspects of geographic and land information system development in government and private organizations. Epstein.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing and permission of instructor.

893 Advanced Individual Studies I-5
Advanced individual studies in selected areas not otherwise offered in natural resources.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing and permission of instructor. Not for use by PhD candidates who have passed the general examination. Not more than 10 hrs of any 693 and/or any 693 will apply toward the master's degree. This course is graded S/U.

894 Advanced Group Studies 2-5
Advanced group studies in the nature and management of natural resources.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

897 Research Proposal Colloquium G 2
A colloquium for graduate students to present their thesis proposals begun in Mat Res 800.
Sp Qtr. 1 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

985 Research Paradigms G 5
An examination of research paradigms and techniques used in the disciplines involved in natural resource science and management.
Au Qtr. 5 cl. Prereq: PhD standing or permission of instructor. Required of all ODAK PhD students in Natural Resources.

997 Advanced Seminar in Natural Resources G 1
Advanced seminar on current topics in Natural Resources science and management
Au, Wi, Sp Qtr 1 1/2-hr cl Repeatable to a maximum of 3 cr hrs. This course is graded S/U. Required of all students seeking the ODAK PhD in Natural Resources.

999 Research G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Naval Science
110 Converse Hall, 2121 Tuttle Park Place, 292-6016

The sequence of naval science courses is the same for all officer candidate students for the first academic year. Officer candidate students accepted into the Marine Corps Option will have curriculum variations commencing with their second year. Additionally, some candidates may be required to complete courses in American military affairs, national security policy studies, mathematics, and/or the physical sciences. Descriptions of the course requirements for each candidate classification (scholarship/college program) may be obtained from the Office of Naval Science. Naval Science courses are open to all students in good standing. Initial enrollment in the NROTC Program may be completed by scheduling Naval Science 111 during Autumn Quarter registration. Completion of naval science and degree requirements may lead to a commission in the U.S. Navy or the U.S. Marine Corps.

Normal sequence of Naval Science courses is as follows:
First Year:
- All candidates—111, 121, 131
Second Year:
- Navy candidates—211, 221, 231
- Marine candidates—351, 352, 353
Third Year:
- Navy candidates—311, 321, 331
- Marine candidates—451, 452, 431
Fourth Year:
- All candidates—411, 421, 431
733 Successional Dynamics of Forests U G 5
Analysis of past development of forest stands; examination of major processes causing changes over time in communities of trees. Hix.
Wi Qtr (Odd years), 2 cl, 4-hr lab, and arranged 1 or 2 all-day field trips. Prereq: Sr or grad standing; permission of instructor.

750 Resolving Social Conflict G 4
A multidisciplinary examination of social conflict, its dynamics, and its negotiated and consensual resolution; offers a broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts. Davis and Epstein.
Au Qtr. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Cross-listed in Business Administration: Interdisciplinary and City and Regional Planning.

752 Environmental Science and Law U G 4
Introduction to the common and statutory law and administration of environmental protection, with special emphasis on scientific and technological aspects.
Au Qtr. 2 2-hr cl. Prereq: Grad or Jr or Sr standing. Not open for credit applicable to the JD degree. Epstein.

756 Rehabilitation/Restoration of Ecosystems U G 3
Intermediate-level course dealing with ecosystems drastically disturbed by human impacts and strategies employed to rehabilitate and restore them for long-term biological productivity and use. Wal.
Au Qtr. 2 1 1/2-hr cl. Prereq: Sr or grad standing; 100, 200 and 20 additional hrs in natural resources or natural science; or permission of instructor.

760 Ecosystem Modeling U G 5
Development and simulation of ecological models for natural resource/ ecosystem management; conceptual and symbolic models, simulation techniques on main frame and microcomputers. Mitsch.
Wi Qtr. 5 cl. Arr. Prereq: Math 151 and Zoology 413.01 or equiv.

780 Characteristics, Management, and Environmental Impact of Organic Wastes U G 3
Survey of organic wastes; their production, characteristics, treatment, utilization, environmental impact, and regulation. Logan.
Wi Qtr. 2 1 1/2-hr cl. Prereq: Sr or grad standing and at least 20 hrs of chemistry and biology. Not open to students with credit for Agromony 780.

795 Parks and Recreation Research Seminar U G 2
Presentation, evaluation, and discussion of current parks and recreation research and research needs. Christensen.
Wi Qtr. 1 2-hr cl. Prereq: Grad standing or honors students in parks and recreation administration. Repeatable to a maximum of 4 cr hrs.

797 Interdepartmental Seminar U G 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.
Su, Au, Wi, Sp Qtr.

798 Current Topics in Environmental Science and Engineering U G 1
Seminar course which presents current research findings on environmental quality and pollution control.
Au, Sp Qtr. 1 cl. Prereq: Grad standing in eng, sci, nat res, agr, or permission of instructor. Not available for simultaneous credit as Civil En 798. Repeatable to a maximum of 3 cr hrs. Cross-listed in Civil Engineering.

800 Research in Natural Resources G 2
The use of science and research to address natural resource problems; development of a thesis proposal. Roth and Heywood.
Au Qtr. 1 2-hr cl. Prereq: Grad standing.

810 Case Studies and Evaluation of Environmental Communication G 5
Case studies in effectiveness of environmental communication and practice in evaluation of various communication techniques associated with a current environmental issue. Fortner.
Au Qtr. 1 3-hr cl. Prereq: Grad standing.

811 Program Development in Environmental Education G 3
Environmental education theory and program development with application to participant's academic/professional specifications. Roth.
Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

817 Applied Mathematical Ecology G 5
Application of the method of mathematical ecology to problems of environmental engineering.
Au Qtr. 5 cl. Prereq: Permission of instructor. Not open to students with credit for Civil En 885I or 817. Cross-listed with Civil En 817.

819 Environmental Interpretive Research and Theory G 5
Analysis of theoretical basis for environmental resources information and education programming. Mullins.
Wi Qtr. 1 3-hr cl; 2 hrs arr. Prereq: Grad standing.

840* Policies Relating to Governmental Recreation Areas G 3
Organizational policies and structures relating to federal, state, and local governmental agencies. Douglass and Heywood.
Wi Qtr. 3 cl. Prereq: S40, and 642 or 643, or 644 or equiv with permission of instructor.

841* Outdoor Recreation Behavior G 3
Analysis of theories related to understanding outdoor recreation behavior of individuals, social groups, and societal aggregations, and implications for managing recreation settings.
Wi Qtr. 2 1 1/2-hr cl. Prereq: Grad standing or permission of instructor.

861 Geographic Information System Institutions G 4
Institutional, legal, economic, and social aspects of geographic and land information system development in government and private organizations. Epstein.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing and permission of instructor.

893 Advanced Individual Studies G 1-5
Individual studies in selected areas not otherwise offered in natural resources.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Grad standing and permission of instructor. Not for use by PhD candidates who have passed the general examination. Not more than 10 hrs of any 693 and/or any 883 will apply toward the master's degree. This course is graded S/U.

894 Advanced Group Studies G 2-5
Advanced group studies in the nature and management of natural resources.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

897 Research Proposal Colloquium G 2
A colloquium for graduate students to present their thesis proposals begun in Nat Res 800.
Sp Qtr. 1 2-hr cl. Prereq: Grad standing. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

898 Research Paradigms G 5
An examination of research paradigms and techniques used in the disciplines involved in natural resource science and management.
Au Qtr. 5 cl. Prereq: PhD standing or permission of instructor. Required of all OAAK PhD students in Natural Resources.

997 Advanced Seminar in Natural Resources G 1
Advanced seminar on current topics in Natural Resources science and management.
Au, Wi, Sp Qtr. 1 2-hr cl. Repeatable to a maximum of 3 cr hrs. This course is graded S/U. Required of all students seeking the OAAK PhD in Natural Resources.

999 Research G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Naval Science

110 Converse Hall, 2121 Tuttle Park Place, 29C-6015

The sequence of naval science courses is the same for all officer candidate students for the first academic year. Officer candidate students accepted into the Marine Corps Option will have curriculum variations commencing with their second year. Additionally, some candidates may be required to complete courses in American military affairs, national security policy studies, mathematics, and/or the physical sciences. Descriptions of the course requirements for each candidate classification (scholarship/college program) may be obtained from the Department of Naval Science. Naval Science courses are open to all students in good standing.

Initial enrollment in the NROTC Program may be completed by scheduling Naval Science 111 during Autumn Quarter registration. Completion of naval science and degree requirements may lead to a commission in the U.S. Navy or the U.S. Marine Corps.

Normal sequence of Naval Science courses is as follows:

First Year:
- All candidates—111, 121, 331

Second Year:
- Navy candidates—211, 221, 231
- Marine candidates—351, 352, 353

Third Year:
- Navy candidates—311, 321, 331
- Marine candidates—451, 452, 453

Fourth Year:
- All candidates—411, 421, 431
111 Survey of Naval Science U 3
An introduction to and survey of disciplines peculiar to naval science including a discussion of naval tasks and missions, regulations, customs, traditions, and organizational relationships.
Au Qtr. 3 cl, 1-2 hr lab. Prereq: Enrollment in NROTC Unit or permission of Instructor. Not open to students with credit for 154. Students enrolling in this course are to contact the Naval Science Department (292-6015) to receive information about an orientation program.

121 Seapower and Maritime Affairs I U 3
An analysis of seapower and maritime affairs as related to the naval forces of the United States.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: 111 or permission of instructor. Not open to students with credit for 157.

131 Naval Weapons Systems U 3
Theoretical presentation of fundamental weapons concepts including electromagnetic principles, feedback controls, and basic ballistics.
Sp Qtr. 3 cl, 1-2 hr lab. Prereq: 121 or permission of instructor. Not open to students with credit for 261.

211 Naval Weapons and Engineering U 3
Applications of naval weapons systems utilizing basic principles. The course then transitions to an introduction to ship propulsion systems, ship construction, and fundamental thermodynamic principles.
Au Qtr. 3 cl, 1-2 hr lab. Prereq: 131 or permission of instructor. Not open to students with credit for 262.

221 Naval Ship Systems Engineering U 3
Study of conventional ship propulsion systems, auxiliary power systems, nuclear power, and new innovations in ship propulsion.
Wt Qtr. 3 hr lec, 1-2 hr lab. Prereq: 211 or permission of instructor. Not open to students with credit for 263.

231 Introduction to Naval Leadership and Management U 2
Introduction to leadership principles and naval organizational effectiveness.
Sp Qtr. 3 cl, 1-2 hr lab. Prereq: 131 or permission of instructor. Not open to students with credit for 465.

311 Naval Operations U 4
An introduction to fleet operations, tactics, naval communications, and the Coast Guard rules of the road.
Au Qtr. 2-3 hr cl, 1-2 hr lab. Prereq: 131 or permission of instructor. Not open to students with credit for 332.

321 Piloting U 4
A study of piloting vessels at sea including the determination of position by dead reckoning, visual bearings, and electronic methods.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: 131 or permission of instructor.

331 Naval Operations and Leadership U 3
A study of fleet operations and the leadership role of the junior officer in these operations.
Sp Qtr. 2 1/2-hr cl, 1-2 hr lab. Prereq: 321 or permission of instructor.

351* Evolution of the Art of War, Part I U 3
A study of the evolution of weapons and tactics, illustrating the principles and variables of war used in certain battles from Alexander through the Prussian influence.
Au Qtr. 3 cl, 1-2 hr lab. Prereq: 265 or completion of summer camp.

352* Evolution of the Art of War, Part II U 3
A continuation of the study of evolution of the art of war from the age of Mahan through contemporary problems and military possibilities.
Wt Qtr. 3 cl, 1-2 hr lab. Prereq: 351.

353 Modern Basic Military Strategy and Tactics U 1
A survey of modern strategic and tactical principles, and current military developments.
Sp Qtr. 1-2 hr sem. Prereq: 352.

411 Joint Naval Warfare U 2
Introduction to the fundamental concepts that govern joint warfare in the modern American military establishment.
Au Qtr. 2-1 hr cl, 1-2 hr lab.

421 Military Law U 2
A seminar study of management and leadership, and issues related to military law and the UCMJ.
Wi Qtr. 2 cl, 1-2 hr lab. Not open to students with credit for 476.

431 Naval Leadership U 2
A seminar study of naval leadership in contemporary issues.
Sp Qtr. 2 cl, 1-2 hr lab. Prereq: 421 or 452. Not open to students with credit for 477.

451* Amphibious Warfare, Part I U 3
The history of amphibious warfare and its development from the battle of Marathon through the Marjah Campaign.
Au Qtr. 3 cl, 1-2 hr lab.

452* Amphibious Warfare, Part II U 3
A study of the doctrinal techniques and present concepts of amphibious warfare from the Marjah Campaign through contemporary engagements.
Wi Qtr. 3 cl, 1-2 hr lab.

Near Eastern, Judaic, and Hellenic Languages and Literatures

See Near Eastern Languages and Cultures.

Near Eastern Languages and Cultures

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

271 Sacred Texts of the Near East U 5
An introductory survey of the sacred texts of the Near East: Egyptian and Mesopotamian, the Bible, the Avesta, Hellenistic Gnostic literature, and the Qur’an.
Au Qtr. 5 cl. GEC arts and hums lit course.

272 Masterpieces of Near Eastern Literatures in Translation U 5
An introduction to major works of the Arabic, Persian, Turkish, and Modern Greek literary tradition from the sixth century to the present.
Wi Qtr. 5 cl. Taught in English.

294 Group Studies U 1-5
Special topics to be announced in the quarter previous to the one in which the course is offered.
Au, Wt, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

341 Islam in America U 5
An examination of the main elements of Islamic belief as well as particular characteristics of each major Islamic group in the United States.
Sp Qtr. 2-2 hr cl. GEC arts and hums cultures and ideas course.

372 Literatures and Cultures of the Islamic World U 5
A survey of the Islamic world by way of literature and culture.
2-2 hr cl. Prereq: English 110 or 111 or equiv. GEC arts and hums lit course.

603 Grammar of Selected Ancient Near Eastern Languages U G 5
Fundamentals of grammar and reading in ancient Near Eastern languages (language of study to be announced, e.g., Egyptian, Coptic, Sumerian, Babylonian, Northwest Semitic dialects, Syriac).
Wi, Sp Qtr. 5 cl. Prereq: Knowledge of a Semitic language or permission of instructor. Repeatable to a maximum of 20 cr hrs. Taught in English.

611 Comparative Semitics U G 5
An introduction to the study of the comparative grammar of the Semitic languages.
Wi Qtr. 5 cl. Prereq: Permission of instructor.

630 Introduction to Ugaritic U G 5
Introduction to the language and literature of Ugaritic; readings in the Ugaritic mythological literature.
Sp Qtr. 5 cl. Prereq: Permission of instructor.

645 Contemporary Issues in the Middle East U G 5
Intensive examination of contemporary issues in the Middle East by applying an interdisciplinary approach.
Sp Qtr. 2-2 hr cl. Prereq: Int Stds 245 or jr standing. Not open to students with credit for Int Stds 645. Cross-listed in International Studies.

671 Canon and Communities in the Near East U G 5
Investigation of the process by which Near Eastern sacred texts (Bible, Qur’an, and others) become sacred and the interaction between texts and communities holding them sacred.
Au Qtr. 5 cl.

692 Workshop U G 6
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Su Qtr. Arr. Prereq: Teaching experience and written permission of workshop director. Repeatable to a maximum of 18 cr hrs.
693 Individual Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in 693.10, 693.20, and 693.30.

694 Group Studies U G 1-5
Special topics to be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

998 Research in Judaic and Near Eastern Languages and Literatures G 1-10
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

Neuroscience
3082 Graves Hall, 333 West 10th Avenue, 292-2379
Organ System Physiology
See Physiology 601 and 602.
Sensory Psychobiology
See Psychology 626.
Neurobiology
See Zoology 632.

693 Individual Studies in Neuroscience U G 2-7
Designed to enable the student to pursue a minor investigation in the neuroscience field or laboratory of choice.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 28 cr hrs This course is graded S/U.

723 Cellular and Molecular Neurobiology G 5
Introduction to cellular components of nervous system, cell and molecular biology of nervous tissue, membrane properties and function in neural cells, brief overview of nervous system development.
Au Qtr. 2 2-hr lectures. Prereq: Permission of instructor.

724 Structure and Function of the Nervous System I G 6
Interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.
Wi Qtr. 2-4 cr. Prereq: Permission of instructor.

725 Structure and Function of the Nervous System II G 7
Continuation of 724; interdisciplinary approach to the anatomy, neurobiology, physiology, and biochemistry of the nervous system.
Sp Qtr. 2-4 cr. Prereq: Permission of instructor.

726 Behavioral Neuroscience G 5
Concepts in behavioral neuroscience (motivation, cognition, development, aging, sensory systems, and homeostasis).
Su Qtr. 2 2-hr cl. Prereq: 725 or permission of instructor.

790 Developmental Neurobiology G 3
Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems.
Wi Qtr. 2 1 1/2-hr cl. Prereq: Neurosci 723, 724 and 725, or permission of instructor. Cross-listed in Cell Biology, Neurobiology, and Anatomy.

797 Seminar Topics in Neuroscience G 1 or 2
Selected topics in current neuroscience research.
Su, Au, Wi, Sp Qtrs. 1-2 hr cl. Prereq: Grad standing and permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

800 Molecular Neurobiology G 3
Survey of recent advances in the understanding of the structure and function of molecules known to be of key importance in the nervous system.
Wi Qtr. 3 1-hr cl. Prereq: Permission of instructor.

Psychopharmacology
See Pharmacology 824.

Neurochemistry
See Medical Biochemistry 825.

911 Advanced Studies in Neuroscience G 3
Su, Au, Wi, Sp Qtrs. Prereq: Physiol 602 or 608, or equiv with written permission of instructor.

911.26 Advanced Topics in Integrative Neurophysiology
In-depth presentation of the theory and concepts of neural networks and microcircuits.
2 1/2-hr cl. Cross-listed in Physiology.

999 Research in Neuroscience G 1-15
Research leading to the PhD degree in neuroscience.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing in neuroscience and permission of instructor. Repeatable to a maximum of 180 cr hrs. This course is graded S/U.

Nuclear Engineering
1081 Robinson Laboratory, 206 West 18th Avenue, 292-8510

294 Group Studies in Nuclear Engineering U 1-5
Special group studies of a selected area of nuclear engineering not provided in other courses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

505 Introduction to Nuclear Science and Engineering U G 3
Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses. Hajek.
Au, Sp Qtrs. 2 1 1/2-hr cl. Prereq: Math 255 or 415 and Physics 133, or permission of instructor. Not open to students with credit for Mech Eng 505. Cross-listed in Mechanical Engineering.

606 Radiological Safety U G 3
General principles of radiation, radioactivity, and protection methodology with emphasis on approved operating, handling, and waste disposal procedures, and regulations and biological interactions. Blue.
Au Qtr. 3 cl. 1 2-hr lab.

641 Nuclear Engineering Measurements U G 2
A theoretical and experimental study of the principles of radiation and reactor measurements. Miller/Blue.
Sp Qtr. 3 cl. 3 1-hr lab. Prereq: 505, and Mech Eng 570 or Physics 516 or permission of instructor. Not open for grad cr to graduate students majoring in Nuclear Engineering.

694 Group Studies in Nuclear Engineering U G 1-5
Special group studies of a selected area of nuclear engineering not provided in other courses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

707 Numerical Methods in Particle Diffusion, Heat Transfer, and Radiation Transport U G 3
Wi Qtr. 2 1 1/2-hr cl. Prereq: 605 or 708, or Math 512 or Mech Eng 510, Cptr/Int 541, and Eng Graph 200. Not open to students with credit for Mech Eng 707. Cross-listed in Mechanical Engineering.

708 Reactor Theory G 4
Methods for the design and analysis of nuclear reactor cores. Covers both time-dependent and steady state analysis.
Au Qtr. 2 2-hr cl. Prereq: 505 or equiv. Required course.

716 Probabilistic Reliability and Safety Analysis U G 3
Modeling techniques for probabilistic reliability and safety analysis of large process systems such as found in nuclear, chemical and mechanical systems. Aidekar.
Sp Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in nucl or mech eng or permission of instructor. Not open to students with credit for Mech Eng 716. Cross-listed in Mechanical Engineering.

720 Reactor Dynamics and Control U G 3
Nuclear reactor and nuclear reactor system operation; control system performance requirements and control mechanisms; automatic control systems and their performance with transient and with steady state operation. Miller.
Sp Qtr. 3 1 1/2-hr cl. Prereq: 605 or 708.

735 Power Plant Operations I U G 3
Introduction to power plant systems, regulatory requirements, and integrated plant operations. Hajek.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 505 or permission of instructor. Repeatable to a maximum of 6 cr hrs.
736 Nuclear Power Plants U G 3
A study of thermal and mechanical design aspects and economics of nuclear power plants and processes. The thermodynamics of operating nuclear power plants (BWR and PWR) are emphasized. Christensen.
Wi Qtr. 2 11/2-hr cl. Prereq: 505 and Mech Eng 501 or 500 with permission of instructor. Not open to students with credit for 636 or Mech Eng 636 or 736. Cross-listed in Mechanical Engineering.

737 Heat Transfer Applications in Nuclear Reactor Systems U G 3
The heat transfer applications in nuclear reactor systems include but are not limited to: heat transfer in PWR and BWR fuel rods, coolant, and reactor internals. Christensen.
Sp Qtr. 2 11/2-hr cl. Prereq: 636 or 736, or Mech Eng 636 or 736, and Mech Eng 510 or 500 with permission of instructor. Not open to students with credit for 637 or Mech Eng 637 or 737. Cross listed in Mechanical Engineering.

739 Knowledge-Based Systems in Engineering U G 3
Application of knowledge-based system principles to engineering problems, including practical knowledge engineering, techniques for problem assessment, and implementation. Davis
Wi Qtrs. 2 11/2-hr cl. Prereq: Cptrinf 630 or permission of instructor. Cross-listed in Computer and Information Science; Chemical, Civil, and Mechanical Engineering.

742 Nuclear Radiations and Their Measurement U G 3
A theoretical and experimental study of nuclear radiation sources, interactions with matter, and detection.
Wi Qtr. 2 11/2-hr cl, 1 3-hr lab. Prereq: 605 or 708, 606, or permission of instructor.

743 Nuclear Radiations and Their Shielding U G 3
A theoretical and experimental study of nuclear radiation, interactions with matter, and shielding. Blue.
Sp Qtr. 2 11/2-hr cl, 1 3-hr lab. Prereq: 742.

744 Nuclear Reactor Laboratory U G 3
An experimental study of nuclear reactor operating characteristics and fundamental concepts of reactor design. Miller.
Su Qtr. 1 cl, 1 4-hr lab. Prereq: 705 or 708,720, and 742.

745 Power Plant Operations II U G 3
Provides experience with integrated plant operations at a nuclear power plant simulator. Hajek.
Sp Qtr. Arr. Prereq: 735 or permission of instructor. Repeatable to a maximum of 6 cr hrs.

751 Nuclear Materials Engineering U G 3
A theoretical study of microstructural damage mechanisms and response of materials exposed to radiation fields.
Au Qtr. 3 cl. Prereq: 505, 605 or 708, and 742.

756 Nuclear Engineering Design U G 3
Practice in the analysis and design of nuclear systems and the use of nuclear engineering principles. Christensen.
Au Qtr. 1 cl, 2 2-hr lab. Prereq: 605 or 708, and 743.

771 Radioactive Waste Management U G 3
Overview of radioactive waste management. Covers waste categories, sources, treatment and disposal methods, minimization, transportation and current research topics.
Au Qtr. Prereq: 505 or 606 or permission of instructor. Cross-listed in Civil Engineering.

772 Nuclear Fuel Cycles U G 3
A study of the production, utilization, waste disposal, safeguards, and economic aspects of nuclear fuel cycles of importance in nuclear power technology. Bailey.
Au Qtr. 2 11/2-hr cl. Prereq: 505 and 636 or 736.

793 Individual Studies in Nuclear Engineering U G 1-10
Aids the qualified student the opportunity for independent reading, study, or laboratory work in a specialized field of interest. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

845 Advanced Laboratory Studies G 1-8
Experimental treatment of advanced nuclear engineering concepts. Sp, Su Qtrs. Prereq: 743 or 744, and permission of instructor.

880 Advanced Topics
An advanced course of study for special topics in nuclear engineering; topics will be announced each quarter.
Arr. Prereq: Permission of instructor. Each subdivision repeatable to a maximum of 12 cr hrs. Offered as demand warrants. These courses are S/U graded.
880.01 Reactor Physics G 1-3
880.02 Reactor Kinetics, Dynamics and Controls G 1-3
880.03 Reactor Design G 1-3
880.04 Fuel Management G 1-3
880.05 Radiation Effects G 1-3
880.06 Radiation Transport and Shielding G 1-3
880.09 Nuclear Instrumentation G 1-3
880.09 Special Studies in Radioactive Waste Management G 1-3
880.20 Special Topics G 1-3

881 Nuclear Engineering Seminar G 1
Current topics in nuclear engineering.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in nucl en. Repeatable to a maximum of 15 cr hrs.

894 Group Studies in Nuclear Engineering G 1-5
Special group studies of a selected area of nuclear engineering not provided in other courses.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

999 Research in Nuclear Engineering G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Nursing

120 Newton Hall, 1585 Neil Avenue, 292-4041

293 Individual Studies in Nursing U 1-8
Individual investigation of selected areas in introductory nursing studies.
Su, Au, Wi, Sp Qtrs. Prereq: 1st or 2nd year standing in nursing and written permission of instructor. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

294 Group Studies in Nursing U 1-5
Selected topics in Nursing.
Su, Au, Wi, Sp Qtrs. Prereq: 1st or 2nd yr standing in nursing, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

300 Theoretical Foundations of Professional Nursing U 1-5
Theory, process, and discipline of nursing from historical and contemporary perspectives; emphasis on professional roles related to concepts of person, health, illness, and environment.
1-5 cl. Prereq: Admission to nursing or permission of instructor. Repeatable to a maximum of 5 cr hrs.

H320 Honors Seminar

HS20.01 Honors Seminar I U 1
Discussion of topics relevant to academic, professional, and personal development in nursing. First in a series of three. Sophomore Honors Seminars.
Au Qtr. 2 5-hr cl/qtr. Prereq: Soph standing in nursing, enrolled in Honors Program.

H320.02 Honors Seminar II U 1
Discussion of topics relevant to academic, professional and personal development in nursing. Second in a series of three sophomore honors seminars.
Wi Qtr. 2 5-hr cl/qtr. Prereq: Soph standing in nursing, enrolled in Honors Program and HS20.01.

H320.03 Honors Seminar III U 1
Discussion of topics relevant to academic, professional and personal development in nursing. Third in a series of three sophomore honors seminars.
Sp Qtr. 4 21/2-hr seminars/qtr. Prereq: H320.02.

335 Human Developmental Processes: A Nursing Perspective U 3
A study of normal biopsychosocial development processes and tasks from conception through adolescence; special emphasis on implications for nursing.
3 cl. Prereq: Admission to nursing or permission of instructor.
336 Human Developmental Processes: A Nursing Perspective II

A study of normal biopsychosocial development processes and tasks from young adulthood through late adulthood; special emphasis on implications for nursing.

3 cr. Prereq: 335 or permission of instructor.

355 Nursing Health Assessment U 5

Study of the techniques used in performing health assessments on individuals throughout the life span; lab opportunities for practice of techniques on healthy young adults.

Su Qtr. 9 cl, 4-hrs lab. Prereq: 300, 380, Pharmacy 470.

362 Foundations of Clinical Nursing U 8

Process and psychomotor skills fundamental to nursing; emphasis on nursing process and patient data base; interpersonal skills and functional health patterns.

Su Qtr. 4 cl, 12 hrs lab and clinical. Prereq: 300, 380, Pharmacy 470; prereq or concur: 355. Clinical sites may occur at selected extended care facilities in Franklin County.

380 Human Pathophysiology Processes: A Nursing Perspective U 5

Study of pathophysiological process as a foundation for nursing practice; focus on cellular, organ, and systemic response to disruptions of body structure and function.

5 cr. Prereq: 335 and 336 or equiv. Zoology 232, Human Ntr 310, Microbiol 509; prereq or concur: 300 and Pharmacy 470.

390 Introduction to Nursing Research U 3

An introduction to the research process and its relevance to the advancement of nursing theory and practice.

Au, Wi, Sp Qtrs. 3 cl. Prereq: 355, 362 and an approved data analysis course.

H420 Honors Seminar U 1

Discussion of topics relevant to the senior thesis proposal.

H420.01 Honors Seminar IV

Discussion of topics relevant to the senior thesis proposal. First in a series of three junior level Honors Seminars.

Au Qtr. 4 2½-hr cl/qr. Prereq: Jr standing in nursing, enrolled in Honors Program. H420.03.

H420.02 Honors Seminar V

Discussion of topics relevant to the senior thesis proposal development. Second in a series of three junior level Honors Seminars.

Wi Qtr. 4 2½-hr cl/qr. Prereq: H420.01.

H420.03 Honors Seminar VI

Discussion of topics relevant to the senior thesis proposal development. Third in a series of three junior level Honors Seminars.

Sp Qtr. 4 2½-hr cl/qr. Prereq: H420.02.

430 The Childbearing Family U 4

Au, Wi, Sp Qtrs.

430.01 Nursing of the Childbearing Family

Nursing of the childbearing family with primary emphasis on the mother and neonate; consideration is given to individuals experiencing complications of childbearing and reproduction.

4 cr. Prereq: Jr standing in nursing.

430.02 Practicum in Nursing of the Childbearing Family

Application of theoretical knowledge and the nursing process to the care of childbearing families, particularly the antepartal, intrapartal, and postpartum woman and the neonate.

12 hrs clinical. Prereq: Jr level standing in nursing. Concur: 430.01 or permission of instructor.

432 Adults with Acute and Chronic Physical Illnesses I U 4

Au, Wi, Sp Qtrs.

432.01 Nursing of Adults with Acute and Chronic Physical Illnesses I

Nursing knowledge of health and illness care with adults who have acute and chronic physical illnesses.

4 cr. Prereq: Jr standing in nursing.

432.02 Practicum in Nursing of Adults with Acute and Chronic Physical Illnesses I

Application of theoretical knowledge and the nursing process to the care of adults with acute or chronic physical illnesses.

12 hrs clinical. Prereq: Jr standing in nursing. Concur: 432.01 or permission of instructor.

434 Individuals with Mental Illness U 4

Au, Wi, Sp Qtrs.

434.01 Nursing of Individuals with Mental Illness

Nursing knowledge for health promotion and restoration of individuals with mental illness.

4 cr. Prereq: Jr standing in nursing or permission of instructor.

434.02 Practicum in Nursing of Individuals with Mental Illness

Application of nursing knowledge for health promotion and restoration of individuals with mental illness.

12 hrs clinical. Prereq: 12 hrs clinical. Prereq: Jr standing in nursing. Concur: 434.01 or permission of instructor.

440 Transcultural Nursing U 3

Concepts and techniques used by nursing in cultural assessments of individuals, families, and communities.

Au, Wi, Sp Qtrs. 3-hr cl. Prereq: Jr level standing in the College of Nursing.

450 Interpersonal Relationships in Professional Nursing Practice: Boundaries U 1-2

In-depth study of interpersonal relationship boundary issues in nursing, including the interpersonal relationship of personal relationship issues and professional relationship issues.

Wi Qtr. 2 hrs cl. Prereq: Admission to the College of Nursing or permission of instructor. This course is graded S/U.

H520 Honors Seminar U 1

Discussion of topics relevant to the senior thesis process.

H520.01 Honors Seminar VII

Discussion of topics relevant to the senior thesis process. First in a series of three senior level Honors Seminars.

Au Qtr. 3 3½-hr cl. Prereq: H420.03.

H520.02 Honors Seminar VIII

Discussion of topics relevant to the senior thesis process. Second in a series of three senior level Honors Seminars.

Wi Qtr. 3 3½-hr cl. Prereq: H520.01.

H520.03 Honors Seminar IX

Discussion of topics relevant to the senior thesis process. Third in a series of three senior level Honors Seminars.

Sp Qtr. 3 3½-hr cl. Prereq: H520.02.

522 Community Health U 4

Au, Wi, Sp Qtrs.

522.01 Community Health Nursing

Community health nursing knowledge, incorporating concepts of epidemiology, populations, levels of prevention, health promotion, and health care systems.

4 cr. Prereq: Sr standing in nursing.

522.02 Practicum in Community Health Nursing

Nursing knowledge of community health incorporating concepts of epidemiology, populations, levels of preventive, health promotion, and health care systems.

12 hrs clinical. Prereq: Sr standing in nursing; concur 522.01 or permission of instructor.

524 Children and Their Families U 4

Au, Wi, Sp Qtrs.

524.01 Nursing Care of Children and Their Families

Nursing knowledge of infants and children with acute and chronic illnesses and their families, consideration is given to health promotion during childhood.

4 cr. Prereq: Sr standing in nursing.

524.02 Nursing Care of Children and Their Families

Application of nursing knowledge and nursing process to the care of children and their families; emphasis is on those with acute and chronic illnesses.

12 hrs clinical. Prereq: Sr standing in nursing. Concur: 524.01 or permission of instructor.

526 Adults with Acute and Chronic Physical Illnesses II

Au, Wi, Sp Qtrs.

526.01 Nursing Adults with Acute and Chronic Physical Illnesses II

Nursing knowledge of adults with acute and chronic multiple system physical illnesses; consideration of family, social issues, environmental systems, and continuity of care.

4 cr. Prereq: Sr standing in nursing.

526.02 Practicum in Nursing Adults with Acute and Chronic Physical Illnesses II

Application of theoretical knowledge and nursing process to the care and management of adults with multiple physical illnesses; consideration of family and health-care systems.

18 hrs clinical. Prereq: Sr standing in nursing. Concur: 526.01 or permission of instructor.

530 Contemporary Nursing Practice Issues U 3

Study of the nurse's role in health care delivery systems and the analysis of contemporary issues affecting the professional nurse and nursing practice.

Au, Wi, Sp Qtrs. 3 cl. Prereq: Sr standing in Nursing.
H541 Introduction to Nursing Research U 5
An introductory course in nursing research methods; alternate research designs and data analysis techniques for interested and capable students. Au Qtr. Prereq: Stat 135, 145 or Psych 200 or Social 654, Jr or Sr standing, 3.50 cum, phr ratio or above and permission of instructor. Not open to students with credit for 540.

H580 Ethical Conflicts in Health Care Research, Policy, and Practice U 5
An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice. Wi Qtr. 2-hr cl. Prereq: Jr or Sr in college of nursing, Philos 130, or permission of instructor. Not open to students with credit for Philos 4580. Cross-listed in Philosophy.

593 Individual Studies U 1-8
Study of selected problems in nursing. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 16 or hrs. This course is graded S/U.

595 Leadership in Nursing for Students in the Reserve Officer's Training Corps (ROTC) U 4
Application of knowledge gained from previous nursing courses to the role of an Army Nurse Corps officer. Au Qtr. Independent Study. Prereq: Must have completed the junior level of the nursing curriculum and be a cadet in the Reserve Officer's Training Corps. This course is graded S/U.

601 Scientific Thought in Nursing U G 3
Study of the nature of scientific thought, critical thinking and moral reasoning in the discipline of nursing. Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Admission to master's program in nursing or permission of instructor.

602 Theoretical Foundations for Advanced Practice Roles in Nursing U G 3
The study of theoretical foundations for advanced nursing practice. Su, Au, Wi Qtrs. 3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

603 Nursing within the American Health Care System U G 3
Analysis of American health care delivery system and policy making process with an emphasis on social, political, and economic factors affecting delivery of nursing services. Su, Au, Sp Qtrs. 1 3-hr cl. Prereq: Admission to master's program in nursing or permission of instructor.

652 Nursing Process in the Operating Room U 3
Study of nursing process with clients in the pre-operative, intra-operative, and post-operative phase; emphasis on scrub nurse and circulating nurse roles. Su, Au, Wi, Sp. Qtrs. 1 cl, 4-hrs clinical. Prereq: Sr standing in nursing and permission of instructor. This course is graded S/U.

Examination of theory and research relevant to nursing assessment of early parent-child interaction and its application to nursing interventions to improve child health outcomes. Su Qtr. 2 cl, 2 hrs lab. Prereq: Sr or grad standing in nursing or permission of instructor.

654 Human Sexuality and Nursing Practice U G 3
Use of nursing theory and nursing process to study sexual health and aberrations in sexual health across the life span. Sp Qtr. 3 cl. Prereq: Sr or grad student in Nurs, RN, or permission of instructor.

655 Introduction to Critical Care Nursing U 2-5
Clinical concentration in critical care nursing including: pathophysiology, pharmacology, advanced nursing skills and treatment modalities in selected critical care clinical situations. Sp Qtr. 2 cl, 9 hrs clinical. Prereq or concour: 526.01 and 526.02 or permission of instructor. Repeatable to a maximum of 5 or hrs. This course is graded S/U. Elective course offering in nursing.

656 Oncology Nursing U 2
Basic and intermediate level information for nursing care of people with cancer including prevention, detection, and treatment in acute, ambulatory or home care settings. Au, Sp Qtrs. 2 cl. Prereq: Sr undergrad student in the College of Nursing or RN student or permission of instructor.

694 Group Studies in Nursing U G 2-5
Group studies of special problems in nursing; topics vary for quarters. Su, Au, Wi, Sp Qtrs. Prereq: 4th yr nursing or grad student. Repeatable to a maximum of 15 or hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su Qtr. Arr. Prereq: Written permission of department chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Interprofessional Education
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. 3 cl. Repeatable to a maximum of 9 or hrs. Limited to students in allied medical professions, education, law, nursing, medicine, social work, and theology (Columbus seminars).

700.01 Interprofessional Care U G 3
Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients. Wi Qtr.

700.02 Changing Societal Values U G 3
Identification and clarification of value considerations as they relate to professional problems in dealing with consumers/clients/patients.

700.03 Ethical Issues U G 3
Ethical issues of concern to the professions and arising out of the advanced technology: euthanasia, mind control, malpractice, and social responsibility of the profession. Au Qtr.

700.04 Interprofessional Practicum in Clinical Settings U G 3 or 5
Interprofessional teamwork in clinical settings. Arr. Prereq: Permission of instructor.

700.05* Interprofessional Seminar in Policy Analysis U G 3
Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions. 3 cl. Prereq: Permission of instructor.

700.06 Care of Chemically Dependent Families U G 3
Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context. Prereq: Permission of instructor.

700.07 Interprofessional Approaches to Child Abuse and Neglect U G 3
Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect. 1.25-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

701 Research Methods in Nursing G 3
Methods of research used in nursing emphasizing quantitative methods, critique of research studies, data management principles and techniques, and practice in computer applications. Su, Wi Qtrs. 1 2-hr cl, 1 3-hr lab. Prereq: 390 or equiv, concurrent or previous enrollment in required parametric stat course, or permission of instructor.

702 Utilization of Research in Nursing Practice G 3
Evaluation of current nursing practice with research utilization methods; development of critical analysis of extant research, and evaluation protocols for research based practice. Au, Sp Qtrs. 1 3-hr cl. Prereq: 701.

703 Pathophysiology of Altered Health States I G 5
Analysis of theories and research regarding alterations of health states across the life span, with an emphasis on pathophysiological processes. Au Qtr. 5 cl. Prereq: Admission to master's program in nursing or permission of instructor.

704 Pathophysiology of Altered Health States II G 5
Analysis of theories and research regarding alterations of health states across the life span, with an emphasis on pathophysiological processes. Wi Qtr. 5 cl. Prereq: 703 or permission of instructor.

705 Advanced Health Assessment G 5
Enhancement of skills in history taking, including emphasis on examination techniques and concise written recordings. Comprehensive physical, psychosocial, developmental, occupational, cultural and sexual assessments are emphasized. Sp Qtrs. 1.4-hr cl, 3-hr clinical lab. Prereq: Undergrad physical assessment course or equiv. Prereq or concour: 704 or permission of instructor.

706 Pharmacology in Advanced Nursing Practice G 4
Pharmacologic management for the advanced practice nurse of well persons and patients through the life span with selected chronic diseases and acute short-term illnesses. Wi Qtr. 2-2hr cl. Prereq: Enrollment in nursing graduate program or permission of instructor.
707 Reimbursement and Cost Methods for Advanced Practice Nurses G 3
Examination of reimbursement methods for health care services and the concepts of cost analysis necessary for program development/monitoring and management of an independent nursing practice.
Sp Qtr. 3 cl. Prereq: Admission to the master's program in nursing of permission of the instructor; basic skill in spreadsheet development and editing.

710 Promotion of Health in Adults G 3
Theoretical perspective, research, and systematic analysis of interventions to promote health in well and ill persons throughout the adult years.
1 1/2 hr cl. Prereq or concord: 701.

711 Theoretical Foundations of Clinical Decision-Making G 4
Advanced assessment, using a systematic process of diagnostic thinking and clinical reasoning within a research utilization framework via symptom exemplars from nursing practice.
Sp Qtr. 4 cl. Prereq: 704; prereq or concord: 705.

717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities.

717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children G 3
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
Wi Qtr. 1 1/2 hr cl. Not open to students with credit in 717.01 in any of the cross-listed areas. Limit of 20 students.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues G 3
Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.
Su Qtr. 1 1/2 hr cl. Not open to student with credit in 717.02 in any of the cross-listed areas. Limit of 20 students.

721 Theories and Issues in Advanced Parent-Child Nursing Practice G 3
Theories, concepts, and issues from nursing and related sciences relevant to the development and care of women, childbearing families and children in various states of health and illness.
Sp Qtr. 1 3-hr cl. Prereq: Grad student in nursing or permission of instructor.

722 Perinatal/Women's Health Nursing: Advanced Reproductive Dynamics G 4
Application of principles of reproductive physiology, adaptation to menarche, pregnancy, childbearing, and reproductive health assessment data to advanced nursing practice in perinatal and women's health care.
Sp Qtr. 1 3-hr cl. 1 4-hr lab(clinical). Prereq: 704 and undergrad health assessment course.

723 Advanced Pediatric Assessment G 3
Application of principles from growth and development, anatomy, physiology, pathophysiology, pharmacology, clinical decision-making and relevant health assessment data to advanced nursing practice in the care of infants and children.
Sp Qtr. 2 cl. 3-hr lab. Prereq: 703 and 704 or equiv or permission of instructor.

724 Conceptual Framework for Nurse-Midwifery Practice G 3
Introduction to program and theoretical foundations of nurse-midwifery: Health, wellness, health behavior, health promotion, communication. Perinatal epidemiology and nurse-midwifery management process are introduced.
Au Qtr. Seminar and independent learning. Prereq: Admission to the master's program in nursing and the nurse-midwifery area of study, or permission of instructor.

725 Primary Care of Women G 3
Screening, diagnosis, clinical decision-making, treatment and referral are emphasized in the context of common health problems of women across the lifespan.
Su, Wi Qtr. Seminar and independent study. Prereq: 724 or permission of instructor.

726 Pharmacology in Nurse-Midwifery Practice G 3
Knowledge necessary for the pharmacological management by nurse-midwives of: well-women with contraceptive needs and common health problems; pregnant and childbearing women; and the neonate. Seminar and independent study. Prereq: Admission to the master's program in nursing and nurse-midwifery area of study or permission of instructor.

730 Health and Functioning of Older Adults: A Nursing Perspective G 3
Health-promoting nursing interventions with older adults to reduce adverse risks and improve functioning.
2-hr cl, 1-hr seminar, 3-hrs field work. Prereq: 701.

740 Neuroscience Principles and Concepts Relevant to Psychiatric/Mental Health Nursing G 3
Neurobiological bases of brain-mind-behavior relationships in mental health and illness, including chemical dependence. Emphasis on promotion, maintenance and restoration of central nervous system homeostasis.
Au Qtr. 3 hrs lecture/discussion. Prereq: Admission to master's program in nursing or permission of instructor.

745 Advanced Psychiatric/Mental Health Nursing: Individuals and Families G 3
Advanced clinical therapeutic nursing interventions with persons who have severe and persistent mental illness, and/or chemical dependence, and their families.
4-hr seminar/discussion. Prereq or concord: 702 or permission of instructor.

746 Advanced Psychiatric/Mental Health Nursing: Impact of Policies of Behavioral Health Care Systems G 3
Study of political, economic and social forces impacting the public mental health system and delivery of advanced practice nursing services in behavioral health care systems.
3-hr seminar. Prereq or concord: 703; or permission of instructor.

752 Community Health Nursing: Society as Client G 3
Overview of contemporary community health nursing theory, research, and practice skills necessary to provide nursing care to selected groups or aggregates within a community setting.
Wi Qtr. 3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

777 Group Process for the Health Professional G 3
Theoretical approaches to group work in the health professions. Focus on group process, approaches to group therapy and approaches to groups in health care treatment.
1 1/2 hr cl. Prereq: Grad standing or permission of instructor.

778 Chemical Dependence Treatment G 3
Study of chemical dependence as it affects the individual and family. Theoretical concepts and research findings supporting assessment and treatment of chemical abuse and dependence.
3 cl. Prereq: Grad standing or permission of instructor.

779 Advanced Mental Health Assessment and Diagnosis G 3
Identification and synthesis of physical, biological, psychological, and social data to complete a comprehensive psychiatric evaluation with emphasis on adults with serious mental disabilities.
3 cl. Prereq: Admission to master's program in nursing or permission of instructor.

793 Individual Studies in Nursing U G 1-5
Reading, conferences, and minor investigation by an individual student who wishes to study a particular nursing problem intensively.
Su, Wi, Au, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded SU.

797 Interdepartmental Seminars U G 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topics to be announced. Repeatable by permission.
Au, Wi, Sp Qtr. Repeatable by permission of college secretary.

810 Advanced Nursing of Adults with Pulmonary Disease G 6
Examination of biopsychosocial concepts, human responses, advanced nursing assessments, and interventions related to actual and potential health problems in adults experiencing pulmonary illnesses.
2-2 hr cl, 9 hrs clinical. Prereq: 711.

811 Advanced Nursing of Adults with Cardiovascular Illness G 6
Examination of biopsychosocial concepts, human responses, advanced nursing assessments, and interventions related to actual and potential health problems in adults with cardiovascular alterations.
2-2 hr cl, 9 hrs clinical. Prereq: 711.
812 Advanced Nursing of Adults with Acute and Chronic Illnesses G 5
Examination of biopsychosocial concepts, human responses, nursing assessments, and interventions related to actual and potential health problems in adults experiencing acute and chronic illnesses.
2 2-hr cl, 9 hrs clinical. Prereq: 711.

813 Advanced Nursing of Adults with Cancer G 6
Examination of biopsychosocial concepts, human responses, nursing assessments, and interventions related to prevention, diagnosis, and care of adults experiencing cancer.
2 2-hr cl, 9 hrs clinical. Prereq: 711.

819 Advanced Adult Health & Illness Nursing Practicum G 6
Role immersion in the advanced practice of adult health and illness nursing
1 2-hr cl, 15 hrs clinical. Prereq: 810 and 811, or 812 and 813.

829 Advanced Parent-Child Nursing Practicum G 6
Synthesis of knowledge for application to advanced practice to selected populations using theoretical knowledge, management, teaching, and standards of care.
2 cl, 19-hrs clinical. Prereq: 820.02, 821.02, or 822.02.

830 Principles of Gerontological Nursing G 5
Study of aging process and factors that influence health, functional capacity, and nursing care of older adults in the community and in acute and long-term settings.
2-hr cl, 1-hr seminar, 6-hrs field work. Prereq: 702, 704, or permission of instructor.

850 Community Health Nursing: Assessment G 2-5
Study and application of methods used in assessing the health of small groups, aggregates, and communities.
2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 cr hrs.

851 Community Health Nursing: Intervention G 2 or 5
Study and application of methods used in providing nursing interventions to small groups, aggregates, and communities.
2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 cr hrs.
Prereq: 850 and 880.

852 Community Health Nursing: Evaluation G 2 or 5
Study of strategies and evaluation techniques used by community health agencies/advocates.
2-hr lecture/discussion for all students; 12 hrs field work for students enrolled for 5 cr hrs.
Prereq: 851.

859 Advanced Practice Nursing G 2-10
Application of theories, research findings, skills and interventions for advanced practice nursing in primary, acute and chronic care.
Su, Au, Wi, Sp Qtrs. 4-hr seminar: clinical. Prereq: All specialty care courses or permission of instructor. Repeatable.

862 Practicum in Nursing G 2-10
Supervised experiences which permit in-depth study of the roles and relationships in administration, practice, or teaching of nursing.
Prereq: Permission of instructor.

862.01 Administration
Study of administrative position with opportunity to test theoretical knowledge in a health care system.
2 hr sem; field work.

862.03 Nurse Practitioner Practicum
A preceptor-guided, in-depth study of the role and relationships of the nurse practitioner.
4-hr cl (for 2 cr hrs) plus 24 hrs clinical (for an additional 8 cr hrs). Prereq: 819 or 839 or permission of instructor. Repeatable to a maximum of 25 cr hrs.

862.05 Teaching in Nursing G 3-8
Theories and concepts from Nursing and Education are applied and used in selected Nursing Education experiences.
3 sem; field work. Clinical sites arranged with faculty.

880 Seminar G 2-5
Discussion of issues, trends, and problems in nursing; topics to be announced.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs.

893 Individual Studies G 1-5
Advanced individual studies in selected areas not otherwise offered in nursing.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Enrollment in graduate program or permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

894 Group Studies in Nursing G 2-5
Reading and group conferences for graduate students who desire to study a particular trend in nursing or nursing education.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 5 cr hrs.

900 Pro Seminar in Nursing G 1
Examination of current health care problems, national research priorities, issues within nursing science, career patterns of women and doctoral prepared nurses.
Au, Wi, Sp Qtrs. Prereq: PhD student in nursing, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

901 Theoretical Foundations of Nursing Science G 5
Study of the major philosophies of nursing from a historical perspective and analysis of methods for theory development in nursing science.
Au Qtr. 5 cl. Prereq: PhD student in nursing, or permission of instructor: prereq or concur: 900.

902 Quantitative and Qualitative Analysis in Nursing Science
Study of quantitative and qualitative methodologies used in developing and conducting holistic health research at the individual, family, and community levels of analysis.

902.01 Qualitative Methods in Nursing Science G 5
Study of qualitative methods used in conducting nursing research; laboratory experience will include field work; data management and analysis.
Sp Qtr. 3 cl, 4-hrs lab. Prereq: 901 or permission of instructor.

902.02 Quantitative Methods in Nursing Science G 5
Study of biobehavioral quantitative methods and measurement strategies used in conducting nursing research; laboratory experiences will include instrument testing, data management, and analysis.
3 cl, 4 hrs lab. Prereq: 901, 15 cr hrs of res and stat or permission of instructor.

902.03 Research Program Development in Nursing G 3
Study of theoretical, methodological, and analytical approaches building and testing in nursing science, grantmanship process, and career development of a nurse scientist.
2 cl, 3-hr lab. Prereq: 902.01, 902.02 or permission of instructor.

903 Theory Synthesis I G 3
In-depth analysis of health theories from nursing, biological, and behavioral sciences; emphasis on theories derived from a nursing perspective.
Wi Qtr. 3 cl. Prereq: 901 or permission of instructor.

905 Studies in Nursing Science at the Individual System Level
Advanced study in nursing theory and nursing research about individuals in nursing science.
Prereq: 900 and enrollment in PhD program or permission of instructor.

905.01 Study in Nursing Science at the Individual System Level G 3
Study of nursing theory about the individual from a holistic health perspective and development of nursing theory about the individual.

906 Studies in Nursing Science at the Family System Level G 3
Advanced studies in family nursing theory and family nursing research in nursing science.
Prereq: 900 and enrollment in PhD program or permission of instructor.

906.01 Studies in Nursing Science at the Family System Level G 3
Study of family nursing theory from a holistic health perspective and methods for theory construction about the family system in nursing science.

907 Studies in Nursing Science at the Community System Level G 3
Advanced studies in community nursing research in nursing science.
Prereq: 900, enrollment in PhD program or permission of instructor.

907.01 Studies in Nursing Science at the Community System Level G 3
Study of community nursing theory from a holistic perspective and methods for theory construction about the community system in nursing science.
3 cl.

999 Research in Nursing G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Occupational Therapy
School of Allied Medical Professions
456 School of Allied Medical Professions Building, 1583 Perry Street, 292-8824
435 The Analysis of Human Motion Relative to Occupational Therapy Practice U 4
A study of nerve-muscle-bone structures as these relate to observing, counting, and measuring overt bodily movement.
Au Qtr. 3 1-hr cl, 1 2-hr lab. Prereq: CSN & Anat 201 or concurrent and enrollment in Occupational Therapy Division.

450 Practice of Occupational Therapy in Health Care Settings U 5
The development of observation and clinical communication skills, and the analysis of the health care team in health care settings.
Wi, Sp Qtr. 2 1-hr cl, 6 clin hrs. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

451 Directed Practicums
Systematic observation, assessment and written analysis of patient data for treatment plans for individuals with emotional and physical problems.
Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

451.01 Mental Health U 4
Su, Au, Wi, Sp Qtrs. 1 cl, 6 clin hrs.

451.02 Physical Function U 4
Su, Au, Wi, Sp Qtrs. 1 cl, 6 clin hrs.

451.03 Specialty U 1-4
Su, Au, Wi, Sp Qtrs. Arr.

451.04 Public Schools U 2
Wi, Sp Qtrs. 1 cl, 4 clin hrs.

452 Interpersonal Dynamics and Task Oriented Groups in Occupational Therapy U 3
Identification, examination, and demonstration of factors that facilitate or hinder small primary group functioning in occupational therapy.
Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: Enrollment in Occupational Therapy Division.

522 Studies in Psychopathology U 3
A description of selected psychopathologic disorders, diagnoses of behavior, psychiatric treatment procedures and their implications for the practice of occupational therapy.
Sp Qtr. 1 1-hr cl, 1 2-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

540 Alternative Theoretical Constructs of Occupational Therapy Practice and Professional Issues U 5
Examination of the history, organization, and issues of the profession; examination of alternative theoretical constructs that characterize occupational therapy practice.
Wi, Sp Qtrs. 2 2½-hr cl. Prereq: Enrollment in Occupational Therapy Division.

545 Activity Analysis and Media U 2
Activity analysis in relationship to self-care, work, and play.
Wi Qtr. 2 2-hr labs. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

546 Applied Media: Dysfunction, Equipment, and Graded Activity U 2
Grading activity and adapting selected activities that have an impact on performance in patients with selected dysfunctions.
Au Qtr. 2 2-hr labs. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

560 Neurodevelopmental Constructs in the Practice of Occupational Therapy U 3
An examination of the neurodevelopmental constructs and their application to the practice of occupational therapy.
Au Qtr. 2 1½-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

595 Seminar U 1-3
Conferences, group discussions, and presentations of selected topics.
Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded SU.

651 Development of Occupational Behavior Throughout the Life Span U G 5
Exploration of interactions between personal characteristics, roles, activities and environment in the development of occupational behavior throughout the life span.
Wi Qtr. Prereq: Enrollment in Occupational Therapy Division. Required for all occupational therapy majors.

652 Neuroscience: Fundamentals for Occupational Therapists U G 5
Establish a thorough understanding of the fundamentals of neuroscience to enable students to interpret, evaluate and treat clients in an occupational therapy setting.
Wi Qtr. 2 2-hr cl, 1 1-hr cl. Prereq: Enrollment in Occupational Therapy Division. Required for occupational therapy majors. Prereq to Occ Ther 661, 662, 665.

661 Occupational Therapy in Mental Health U 5
The competing theoretical constructs and related intervention techniques for the practice of occupational therapy in the treatment of patients with chronic emotional problems.
Au Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

662 Application of the Neurodevelopmental Constructs U G 5
Analysis of case studies for deviations that require application of neurodevelopmental assessment techniques to develop treatment plans.
Sp Qtr. 4 cl, 1 2-hr lab. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

663 Physical Dysfunction and the Practice of Occupational Therapy U 5
The application of assessment techniques to patients with selected physical dysfunction problems for the development of treatment plans.
Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

664 Advanced Therapeutic Intervention U 3
Principles and methods of evaluation, treatment, and prevention for advanced clinical students.
Au, Wi, Sp Qtrs. 2 cl hr, 1 2-hr lab. Prereq: 560, 661, 662, 663 or equiv with written permission of instructor. Repeatable to a maximum of 6 cr hrs; subdivisions not repeatable.

664.01 Psycho-Social Intervention
664.03 Rehabilitation Technique

667 Occupational Therapy with Young Children U G 3
Overview of pediatic occupational therapy: emphasis on neurophysiological and developmental approaches with young children with developmental disabilities; includes assessment and intervention strategies and family issues.
Sp Qtr. 2 1½-hr cl. Prereq: 560 and 662; tr standing in occ ther.

670 Introduction to Alternative Research Methodologies Used in Occupational Therapy Practice U 3
Historical, theoretical, and descriptive research methodologies applied to the practice of occupational therapy.
Wi, Sp Qtrs. 2 1½-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

675 Developing Plans for Initiating Occupational Therapy Services U 3
Developing and evaluating plans for introducing occupational therapy practice in selected clinical facilities requiring specialized services.
Wi, Sp Qtrs. 2 1½-hr cl. Prereq: Completion of all required Occupational Therapy and AMP courses offered prior to quarter of enrolling in this course.

685 Field Work in Occupational Therapy
A practical experience in application of the principles and functions of occupational therapy in selected hospitals health care facilities, and community agencies.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Cumulative grade point ratio of 2.25 in all professional courses and permission of division director. Completion of all courses required for graduation. Repeatable to a maximum of 18 cr hrs. These courses are graded SU.

685.01 Mental Health U 6
685.02 Physical Function U 6
685.03 Specialty Area U 2, 4, 6
1, 2 or 3 months, arr with instructor. Repeatable to a maximum of 6 cr hrs.

693 Individual Studies U 1-5
Individual reading or research projects by special agreement between instructor and student.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

694 Group Studies U G 1-5
Supervised group studies of special topics pertinent to the practice of occupational therapy.
Su, Au, Wi, Sp Qtrs. Open only to students enrolled in Occupational Therapy Division. Repeatable to a maximum of 15 cr hrs.
Occupational Therapy

701 Occupational Therapy in Early Intervention G 3
Research/theoretical basis of occupational therapy in early intervention; principles and strategies for working with families; therapy approaches with young children; models of service delivery. Au Qtr. 1 3-hr cl. Prereq: Permission of the instructor.

702 Theoretical Approaches in Occupational Therapy with Children G 3
Neurophysiological and sensory integration approaches used in occupational therapy with young children in a variety of settings. Wi Qtr. 1 3-hr cl. Prereq: Permission of instructor.

703 Occupational Therapy in the Schools G 3
An overview of occupational therapy best practice in the public schools. Students gain understanding of educational regulations, service delivery models, educational research and trends. Au Qtr. 3 hrs lecture. Prereq: AMP grad standing or permission of instructor.

793 Individual Studies G 1-5
Guided study with occupational therapy readings, research, and/or experiences selected by the individual and approved by faculty. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

795 Seminar G 1-3
Analysis and group discussion of selected topics. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

889 Advanced Clinical Practicum in Occupational Therapy G 2-4
Advanced clinical experience in occupational therapy. Su, Au, Wi, Sp Qtrs. 1-hr cl and clinic hrs arr. Prereq: Permission of instructor and enrollment in AMP grad program. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

889.01 Pediatric Area of Specialization

Ohio State Biochemistry Program

217 Parks Hall, 500 West 12th Avenue, 292-1463

790 Colloquium—Advanced Biochemistry Topics G 1
Seminars presented by Ohio State faculty and by faculty and professionals from outside the University. Au, Wi, Sp Qtrs. 1 cl. Open only to students in the Ohio State biochemistry program. Repeatable to a maximum of 21 cr hrs. This course is graded S/U.

793 Individual Studies G 1-5
A qualified graduate student may conduct a minor laboratory research investigation in biochemistry under the direction of program faculty members. Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

794 Group Studies G 1-5
Designed for students to investigate advanced selected topics in biochemistry. Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Admission to the OSBP. Repeatable to a maximum of 10 cr hrs.

796 Interdisciplinary Seminar in Advanced Biochemistry G 1
Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 21 cr hrs. 796A—This alphabetical subdivision is graded S/U.

999 Research in Biochemistry G Arr
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. This course will not serve as a replacement for the 999 course offering within a faculty's academic department. Repeatable. This course is graded S/U.

Ophthalmology

5024-B University Hospitals Clinic, 455 West 10th Avenue, 293-8159
The faculty of the Department of Ophthalmology is responsible for the instruction in the pathophysiology of the eye and its adnexa as part of the Med II of the medical curriculum. This instruction is offered under the course designation Med Coll 663. The Department also offers clinical instruction in ophthalmology during Med III and Med IV of the Medical Program designated Med Coll 664. This instruction is offered as a clinical elective period of one month. Research electives are available at any time in the curriculum of medical education.

999 Research in Ophthalmology G Arr
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Optometry

A 400 Starling-Loving, 338 West 10th Avenue, 292-2647

401 Survey of Optometry P 1
Development of optometry and optometric education; scope of optometric services; sources of vision information; kinds of current vision research. Au Qtr. 1 cl. Prereq: Optometry 1st yr standing.

411 Intermediate Geometric Optics P 5
Thick-lens optics; image evaluation; application to optometric systems. Wi Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 1st yr standing and Phys Opt 501.

431 Ophthalmic Optics I P 5
Ophthalmic optics of single-vision and multifocal spectacle lenses; measurement and inspection of spectacle lenses; manufacturing processes. Au Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing and 411.

432 Ophthalmic Optics II P 5
Ophthalmic lens design; minimizing lens aberrations; theory and practice in fitting and adjusting spectacles. Wi Qtr. 4 cl, 1 2-hr lab. Prereq: 431.

433 Ophthalmic Optics III P 4
The optics of corneal and scleral contact lenses; laboratory exercises in inspecting, measuring, edging, surfacing, and modifying contact lenses. Su, Au Qtrs. 3 cl, 1 2-hr lab. Prereq: 432.

441 Practical Optometry I P 4
Theory and techniques of keratometry, skiatometry, objective and subjective tests of refraction, accommodation, and functions of the extra-ocular muscles. Au Qtr. 3 cl, 1 3-hr lab. Prereq: Optometry 2nd yr standing, Physics 112, and Math 150.

442 Practical Optometry II P 4
Correlation and analysis of data; systematic determination of the etiology of anomalies and sources of visual discomfort and inefficiency; diagnosing and prescribing. Wi Qtr. 3 cl, 1 3-hr lab. Prereq: 441.

443 Practical Optometry III P 4
Ophthalmoscopy and examination of the external parts and the media of the eye; case histories; techniques of investigating special types of anomalies; diagnosing; prescribing. Sp Qtrs. 3 cl, 1-3 hr lab. Prereq: 442 and 711.

640 Clinical Practice in Optometry I P 1
Consideration of selected problems and conditions encountered in the delivery of patient care. Su Qtr. 1 cl. Prereq: 443.

641 Clinical Practice in Optometry II P 1

642 Clinical Practice in Optometry III P 1

643 Clinical Practice in Optometry IV P 1
Continuation of 642. Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: 642.

645 Intermediate Special Clinical Practice P 1-6
Clinical experience in specialized phases of optometric practice. Su, Au, Wi, Sp Qtrs. 3-18 clin hrs.

645.01 Intermediate General Practice
Clinical practice in examining the visual system and carrying out corrective procedures. Prereq: Optometry 3rd yr standing and 443. Repeatable to a maximum of 30 cr hrs.

645.02 Intermediate Ophthalmic Dispensing
Prereq: Optometry 3rd yr standing and 443. Repeatable to a maximum of 30 cr hrs.
Otolaryngology

645.03 Clinical Practice Management
Observation and participation in management procedures of a professional optometric practice.
3-9 clinic hrs. Prereq: Optometry 2nd yr standing and 442. Repeatable to a maximum of 15 cr hrs.

651 Orthoptics P 5
Definitions, characteristics, incidence, and phenomenology of visual problems producing loss or inefficiency of binocular vision; diagnosis, prognosis, and orthoptic treatment of such problems.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: Optometry 3rd yr standing and 443.

652 Aniseikonia and Low Vision P 4
Etiology; clinical methods of diagnosing and evaluating aniseikonia and low vision; design of optical aids for such conditions; environmental aids and agencies available to the visually handicapped.
Sp Qtr. 3 cl, 1-2 hr lab. Prereq: Optometry 3rd yr standing and 443.

653 Contact Lenses I P 5
The uses of contact lenses; theory and methods of prescribing and fitting; specification and verification; post-fitting care; contact lens solutions.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: Optometry 3rd yr standing and 443.

654 Contact Lenses II P 4
Theory and clinical methods involving meridional and bilateral contact lenses; fitting astigmatic corneas and aphakic or keratocorneal lenses; cosmetic lenses and prosthetic eyes.
Wi, Sp Qtrs. 3 cl, 1-2 hr lab. Prereq: 653.

660 Ophthalmic Pathology P 3
Gross and microscopic pathology of the eye, including diseases of the conjunctiva, orbital cavity, and pertinent pathology of the central nervous system.
Au Qtr. 3 cl. Prereq: Optometry 3rd yr standing; Phys Opt 712 and Optometry 582.

671 Clinical Binocular Vision I P 5
Classification, epidemiology, phenomenology, diagnosis, and management of nonstrabismic and strabismic binocular vision disorders, accommodative anomalies, amblyopia, ocular motor deficiencies, and visual perceptual lags.
Wi Qtr. 4 cl, 1-2 hr lab. Prereq: Optometry 3rd yr standing and 443.

672 Clinical Binocular Vision II P 2
Continuation of 671.
Sp Qtr. 1 cl, 1-2 hr lab. Prereq: 671.

682 Clinical Ocular Pharmacology P 3
A survey of pharmacologic principles pertaining to drugs which relate to normal and abnormal conditions of the eye, including topical and systemic agents affecting visual performance.
Su, Au Qtrs. 3 cl. Prereq: Pharmacol 681, and 3rd yr standing in Optometry. Open only to students registered in the College of Optometry.

702 Applied Pathology of the Eye II P 4
Motor disturbances of eyes.
Su Qtr. 3 cl, 1-2 hr lab. Prereq: 711.

703 Applied Pathology of the Eye III P 4
Visual fields testing and method of management of related ocular disorders.
Su Qtr. 3 cl, 1-2 hr lab. Prereq: 711.

711 Introduction to Ocular Disease I P 4
Introduction to abnormalities and diseases of anterior and posterior segments of the eye to provide student with the ability to identify and diagnose ocular disease.
Wi Qtr. 3 cl, 1-2 hr lab. Prereq: Optometry 2nd yr standing.

712 Introduction to Ocular Disease II P 4
Continuation of 711.
Sp Qtr. 3 cl, 1-2 hr lab. Prereq: Optometry 2nd yr standing, 711; open to optometry and physiological optics majors.

721 Optometric Economics and Jurisprudence P 3
Historical background; legal status; practice building techniques; office accounting and general practice management; representative organizations in optometry; professional ethics.
Wi, Sp Qtrs. 3 cl. Prereq: 642.

722 Civic and National Problems in Eye Care P 3
Number, distribution, supply relationships, and roles of the various ophthalmic groups; prevalence of visual anomalies; governmental and public-health aspects of vision care.
Su Qtr. 3 cl. Prereq: 721.

741 Advanced Practical Optometry P 2
Consideration of selected conditions encountered during the 4th year clinical assignments; their diagnosis and treatment.
Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Optometry 4th yr standing. Repeatable to a maximum of 6 cr hrs.

745 Special Clinical Practice P 1-15
Clinical experience in specialized phases of optometric practice.
Su, Au, Wi, Sp Qtrs. 3-45 clinic hrs. Prereq: Optometry 4th yr standing and course indicated in selected subdivision. Repeatable to a maximum of 45 cr hrs.

745.01 General Practice
Prereq: 643.

745.02 Contact Lenses
Prereq: 643.

745.03 Strabismus and Orthoptics
Prereq: 651.

745.04 Ocular Pathology
Prereq: 703.

745.05 Aniseikonia
Prereq: 652.

745.06 Low Vision
Prereq: 652.

745.07 Perceptual-Motor Problems
Prereq: 643.

745.08 Ophthalmic Dispensing
Clinical experience in ophthalmic dispensing.
Prereq: 643.

745.09 Geriatric Optometry
Specialized techniques, evaluation methods, patient instructions, and lens design appropriate to the vision problems of the older patient.
Prereq: 643.

745.10 Pediatric Optometry
Specialized testing techniques and methods of evaluation appropriate to infants and children (through age 12) as well as exceptional children of any age.
Prereq: 643.

745.11 Extern Experience
Prereq: 643.

780 Topics in Optometry P 1-5
Clinical and theoretical aspects of areas of current interest in optometry.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in College of Optometry and permission of dean. Repeatable to a maximum of 50 cr hrs. Each subdivision repeatable to a maximum of 10 cr hrs.

780.01 General Optometry

780.02 Contact Lenses

780.03 Strabismus

780.04 Ocular Pathology

780.05 Aniseikonia

780.06 Low Vision

780.07 Visual Development

780.08 Visual Perception

780.09 Visual Performance

780.10 Environmental Vision

780.11 Pediatric Optometry

780.12 Geriatric Optometry

780.13 Ophthalmic Optics

780.14 Special Optical Design

780.15 Optometric Instrumentation

780.16 Public Health Optometry

780.17 Ocular Pharmacology

780.18 Microbiology of the Eye

780.19 Binocular Vision

780.20 Visual Problems of Minorities

780.21 Special

Otolaryngology

Education Office: 4100 University Hospital Clinic, 456 West 10th Avenue, 293-8065

The faculty of the Department of Otolaryngology is responsible for instruction in the pathophysiology of disease of the ear, nose, and throat as part of MED II of the medical curriculum. This instruction is offered under the course designated Med Coll 663. The Department also offers clinical instruction in otolaryngology during MED III and MED IV of the medical program designated Med Coll 684. This instruction is offered as a clinical elective period of 1 month and as part of the otorhinolaryngology elective.
Otolaryngology

794 Group Studies in Otolaryngology P 5
Clinical application of the principles of otolaryngology with patients in clinic and operating room; at least one hour daily supervised teaching by staff members; instruction by slides, films, seminars, and personal supervision. Schuller and staff.
1 month, offered all months. Prereq: Permission of instructor. This course is graded S/U.

Pathology

Education Office: 4164 Graves Hall, 333 West 10th Avenue, 292-6931

501 Principles of Hematopathology U 2
Clinical hematology, including coagulation; urinalysis. Brandt and Theil. Au Qtr. 2 cl. Prereq: Admission to med tech or permission of instructor. This course is no longer graded S/U

502 Principles of Clinical Microbiology U 2
Clinical microbiology, including mycology, Buesching. Wi Qtr. 2 cl. Prereq: Admission to med tech or permission of instructor. This course is no longer graded S/U.

503 Principles of Immunology U 1
Immunology. Becker. Sp Qtr. 1 cl. Prereq: 502 and admission to med tech or permission of instructor. This course is no longer graded S/U.

504 Principles of Clinical Chemistry U G 4
Chemical Pathology of human tissues and body fluids; test-disease correlations. Lott. Sp Qtr. 3 hr lecture, 1 hr recitation. Prereq: Admission to med tech or permission of instructor. This course is no longer graded S/U.

505 Principles of Immunohematology and Transfusion Medicine U 2
Case studies used to illustrate concepts. Kennedy. Wi Qtr. 1 hr lecture, 1 hr discussion. Prereq: 503 and admission to med tech or permission of instructor. Pathological processes in immunohematology. Grad students will be expected to write a more detailed paper for the course.

501 General Pathology G 5
Pathophysiology and manifestations of disease. Boeseil and Hitchcock. Au Qtr. 39 hrs lecture. 10-3 hr labs. Prereq: One course in anatomy, physiology, organic chem, biochem and permission of instructor.

640* Fundamentals of Oncology P G 4
Lecture/seminars covering aspects of oncology; chemical and biologic carcinogenesis, epidemiology, genetics, developmental biology, biochemistry, cell kinetics, clonality, metastases, hormonal and immunology factors, and therapy. Barth and Capen. Wi Qtr. 4 cl. Prereq: Permission of instructor. Cross-listed in Vet Path.

650 Pathology P G 5
Designed to give optometry and selected graduate students an understanding of general pathology including cell injury, inflammation, infection, hemodynamic disturbances, neoplasia, basic immunopathology, and selected specific diseases; with gross and histologic demonstrations. Sp Qtr. 5 cl. Prereq: Optometry 2nd yr standing or permission of instructor.

655 General Pathology P 4
General pathology, including the etiology of diseases, disturbances of nutrition, inflammation, regeneration, and organ pathology. Allen. Wi Qtr. 4 cl. 2-3 hr lab. Prereq: Dent 2nd yr standing.

665* Clinical Immunopathology P G 3
Current overview of clinical immunopathology, etiology, clinical characteristics, and lab diagnosis of immune-mediated diseases. Sedmak. Wi Qtr. 3 cl. Prereq: Permission of instructor. Med Micro 701 or Microbiol 652 or equiv Immunology course strongly recommended.

670 Medical Cytogenetics G 3
Overview of cytogenetics in medical diagnosis and evaluation, including laboratory techniques, nomenclature, structural and numerical chromosome abnormalities, molecular diagnostics, and clinical correlations. Au Qtr. 3 cl. Prereq: Course work in general genetics and molecular or cell biology, and permission of instructor. Theil.

680 Research Design in Biomedical Sciences U G 3
Concepts related to initiating and conducting research; experimental design; use of computer graphics and statistics; and analysis of research reports. Lott. Wi Qtr. 1-2 hr cl. 1 hr arr. Prereq: Sr standing in all med with permission of instructor, or grad standing in all med, pathol or related field.

733 Human Genetics G 3
The principles of human genetics covering mapping of disease genes, defects causing human disease, the cloning of disease genes, gene therapy and transgenesis. Sp Qtr. 3 cl and cpr time arr. Prereq: Mol Gen 500 or 501 or 606 or equiv. Not open to students with credit for M Biochem 733 or Mol Gen 733. Cross-list in M Biochem and Mol Gen.

792 Special Lectures in Pathology
Lectures in special fields of pathology; one decimal subdivision will be offered each quarter. Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Grad standing or enrollment in MD program or undergrad with permission of instructor.

792.01 Blood and Bone Marrow U P G 3
Pathology of the blood and bone marrow with emphasis on the laboratory diagnosis of anemia. Theil. Repeatable to a maximum of 24 cr hrs.

792.02 Lectures in Clinical Chemistry U P G 3
The metabolic basis of disease, interpretation of laboratory data, and clinical laboratory methodology. Lott.

792.04 Neuropathology U P G 3
Selected lectures on neuropathology. YATES. Repeatable to a maximum of 24 cr hrs.

792.05 Immunohematology U P G 3
Transfusion related clinical and laboratory problems and procedures. Kennedy. Repeatable to a maximum of 24 cr hrs.

792.11 Automation and Instrumentation in Clinical Chemistry U P G 3
Advanced analytical techniques as applied to clinical chemical problems with discussion of the applicable areas of chemical pathology. Lott. Repeatable to a maximum of 24 cr hrs.

792.20 Topics in Clinical Pathology G 2

793 Individual Studies in Pathology U P G 3-6, 12, 18
1, 2, or 3 months; offered all months. (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Med III and IV standing; grad standing; or undergrad standing with permission of instructor. When registration is for 3 professional cr hrs, an additional 3 hr professional course must be taken. Each subdivision repeatable to 12 cr hrs. These courses are graded S/U.

793.01 Pathologic Anatomy
Baker.

793.04 Clinical Chemistry
Lott.

793.05 Neuropathology
Rampersoud.

793.06 Immunohematology
Kennedy.

793.07 Clinical Microbiology
Ayers.

793.08 Pediatric Pathology
Qualman.

793.09 Surgical Pathology

793.11 Special Topics in Pathologic Anatomy
Baker.

793.12 Ultrastructure of Cells in Disease
Baker.

793.15 Problems in Pathology and Clinical Pathology

794 Group Studies in Pathology U P G 1-3
Group studies of selected topics in various fields of pathology. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing, 2nd yr med student, or undergrad with permission of instructor. Repeatable to a maximum of 12 cr hrs.

850 Seminar in Pathology and Clinical Pathology G 1
Discussion of pertinent literature, presentation and discussion of research work, and demonstration of fresh specimens and slides. Su, Au, Wi, Sp Qtrs. 1-2 hr-cl. Prereq: Grad standing in pathol. Repeatable. This course is graded S/U.

851 Neurochemical Pathology G 1
Lecture series on selected topics relevant to biochemical mechanisms of neurological disorders; topics change each qtr. Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad standing in pathol. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

999 Research in Pathology G Arr
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.
Pediatrics
Children's Hospital, 700 Children's Drive and N-118 Doan Hall, 410 West 10th Avenue, 722-4552

793 Individual Studies in Pediatrics
Su, Au, Wi, Sp Qtr (grad cr). 1, 2, 3, or 4 months (prof cr). Prereq: Permission of instructor. These courses are graded S/U.
793.03 Infectious Diseases P 5, 12, 18 G 1-5 Powell.
1, 2, 3, or 4 months; offered all months. Repeatable to a maximum of 24 or hrs for professional credit.
793.06 Blood Diseases of Infants and Children P 6 G 1-5 Ruyman.
1 month, offered all months except June.

Persian
203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

101 Elementary Persian I U 5
Introduction to Persian; development of listening, reading, speaking, and writing skills.
Au Qtr. 5 cr. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GCC for lang course. FL. Admis Cond course.

102 Elementary Persian II U 5
Further development of listening, reading, speaking, and writing skills.
Wi Qtr. 5 cr. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GCC for lang course. FL. Admis Cond course.

103 Intermediate Persian I U 5
Development of listening, reading, speaking, and writing skills; reading of simplified literary texts about Persian culture.
Sp Qtr. 5 cr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GCC for lang course.

104 Intermediate Persian II U 5
Reading of Persian short stories and poems with attention to literary and cultural appreciation; development of basic language skills.
Au Qtr. 5 cr. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GCC for lang course.

241 Persian Culture U 5
A survey of Persian culture through the reading of Persian literature in translation, viewing of Persian films, and listening to Persian music.
Sp Qtr. 5 cr. GEC arts and humanities courses.

Masterpieces of Near Eastern Literatures in Translation
See NELC 272.

293 Individual Studies U 1-5
Su, Au, Wi, Sp Qtr. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

294 Group Studies U 1-5
Special topics to be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 20 or hrs.

371* Persian Literature in Translation U 5
A study of Persian literature in translation and the history of its discourses, genres, and styles.
Wi, Sp Qtr. 5 cr. GCC for arts and humanities courses.

401 Advanced Persian I U 5
Extensive reading from literary texts, with practice in conversation and composition.
Wi Qtr. 5 cr. Prereq: 304 or eqiv. Not open to students with credit for 294 Wi Qtr 1983 or Wi Qtr 1984.

402 Advanced Persian II U 5
Advanced reading from literary texts, with further practice in conversation, composition, and translation.
Sp Qtr. 5 cr. Prereq: 401 or eqiv. Not open to students with credit for 294 Sp Qtr 1983 or Sp Qtr 1984.

651 Persian Prose U G 5
Selected readings reflecting the major genres of classical Persian prose, plus a modern novel.
Au, Wi, Sp Qtr. 5 cr. Prereq: 402 or permission of instructor.

652 Persian Poetry U G 5
Selected topics in Persian poetry, concentrating primarily on the medieval poetic narrative, as exemplified by epic, romance, and the mystical didactic poem.
Au, Wi, Sp Qtr. 5 cr. Prereq: 402 or permission of instructor.

693 Individual Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

694 Group Studies U G 1-5
Special topics to be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

712 Studies in Persian Poetry U G 5
Advanced study of specific poetic periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.
Au, Wi, Sp Qtr. 2-2.5 cr. Prereq: 10 or hrs of Persian literature at the 600 level or eqiv. Repeatable to a maximum of 15 or hrs.

H783 Honors Research U 3-5
A program of research for each student which includes individual conferences and culminates in an honors thesis or oral defense. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, sr standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

811 Seminar in Persian Studies G 5
Intensive investigation of a selected topic or problem in Persian literature, literary culture, philology, or linguistics.
Au, Wi, Sp Qtrs. 2.5-3 cr. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs.

998 Research in Persian G 1-10
Research for thesis purposes only.
Su, Au, Wi, Sp Qtr. Repeatable to a maximum of 10 or hrs.

Pharmacology
5072 Graves Hall, 333 West 10th Avenue, 292-8608

600 General Pharmacology U G 3
Introduction to the general principles of pharmacology, drug classification, and the sites and mechanisms of drug action. Tejwani.
Sp Qtr. Prereq: MBiochem 611, Physiol 601, or permission of instructor.

700 Medical and Mammalian Pharmacology
General principles of pharmacology; drugs used for diagnosis, prevention, or eradication of the cause of disease, including endocrine products and chemotherapeutic agents. Tejwani.
Prereq: 600 or permission of instructor.

700.01 Pharmacokinetics, Antimicrobial, and Autonomic Drugs P G 3-4
Au Qtr.

700.02 Cardiovascular, Respiratory, and Endocrine Drugs P G 1-4
Wi Qtr.

700.03 Central Nervous System and Anticancer Drugs; Toxicology and Drug Interactions P G 2-5
Sp Qtr.
Pharmacy

217 Lloyd M. Parks Hall, 500 West 12th Avenue, 292-2266

200 The Rational and Irrational Use of Drugs U 3
Survey of the fundamentals of drug action with special emphasis on drugs of abuse; discussion of medical, social, legal, and educational aspects of drug use. Beaver.
Sp Qtr. 3 cl. Not open to credit to students in the College of Pharmacy, NS Admis Cond course.

400 Introduction to Pharmacy P 2
A survey of the profession of pharmacy, dealing with its history, educational requirements, organization, regulation, and current developments. Hale.
Au Qtr. 2 cl. This course is graded S/U.

403 Pharmaceutics I P 3
The application of physical chemical principles to pharmaceutics; a fundamental introduction to solid and liquid dosage forms. Lee.
Wi Qtr. 3 cl. Prereq: 440; Chem 253; Chem 244, 246, or 255; and Math 152.

405 Pharmaceutics II P 3
The application of physical chemical principles to pharmaceutics and biopharmaceutics; colloids, suspensions, emulsions, solids, and topical dosage forms and the formulation factors affecting drug availability. Frank.
Sp Qtr. 3 cl, 1 recitation. Prereq: 403.
501  Pharmacy III P  3  
The application of biopharmaceutics and pharmacokinetic principles to drug absorption, distribution, and elimination. Staubus.  
Au Qtr. 3 cl. 1 2-hr recitation. Prereq: 405 and 441.

506  Pharmacometrics IV P  3  
The application of biopharmaceutical and pharmacokinetic theory to dosage regimen adjustment, drug and drug product selection, evaluation and use, and optimizing drug therapy. Staubus.  
Wi Qtr. 3 cl. 1 recitation. Prereq: 501.

513  History of Pharmacy  
513.01 Lecture U P  3  
Evolution and development of the profession of pharmacy from antiquity to the present, with emphasis on its Anglo-American development since the 18th century. Buerki.  
Au Qtr. 3 Jr standing or permission of instructor.

513.02 Laboratory U P  1  
The work of the pharmacist before the rise of modern pharmaceutical science. Buerki.  
Arrange. 1 2-hr lab. Prereq: Jr standing or permission of instructor; prereq or concur: 513.01.

513.03 Practicum U P  1  
Supervised discussions and demonstrations of 19th-century pharmaceutical techniques in a museum setting. Buerki.  
Su, Au, Sp Qtrs. 1 cl. Field work arr. Prereq: Jr standing or permission of instructor; prereq or concur: 513.01 and 513.02. Repeatable to a maximum of 3 cr. hrs. This course is graded S/U. Students may obtain up to 300 hrs of internship credit toward their Ohio State Board of Pharmacy internship requirement by participating in this course.

515  Pharmaceutical Distribution and Health Care Systems U  3  
A study of the pharmaceutical distribution system in the United States and its relation to the health care system. Pedersen.  
Sp Qtr. 2 cl. 1 2-hr rec. Enrollment restricted to students in the BPSD program with at least rank III standing or with instructor's permission.

518  Fundamentals of Disease P  4  
A study of the basic pathological principles and a review of the etiology, pathogenesis, and pathology of common human diseases subject to modification by pharmacotherapy. Dasta and clinical faculty.  
Au Qtr. 2 2-hr cl. Prereq: 462, Anatomy 199 or 200, Physiol 312, and Microbiol 509.

517  Pharmacotherapeutics I P  2  
The application of the pharmaceutical and biomedical sciences to the treatment and management of common human diseases. Knoell and clinical faculty.  
Wi Qtr. 2 1 1/2-hr cl. Prereq: 516 and 671; prereq or concur: 506 and 672.

518  Pharmacotherapeutics II P  3  
The application of the pharmaceutical and biomedical sciences to the treatment and management of common human diseases. Nahata and clinical faculty.  
Sp Qtr. 2 1 1/2-hr cl. Prereq: 517.

521  Pharmacy Practice Management P  3  
Management principles, functions, and skills in pharmacy practice. Szellbach.  
Au Qtr. 2 2-hr cl. 1 2-hr lab. Prereq: 515.

522  Strategic Pharmacy Management P  5  
Financial and logistical concepts and techniques for management decision-making in hospital and community settings.  
Au Qtr. 2 2 1/2-hr cl. 1 2-hr lab.

528†  Pharmacy Communications P  3  
Communication problems arising out of professional relationships of the pharmacist with the physician, medical interns, nurses, laboratory technicians, and especially patients. Buerki.  
Wi Qtr. 2 cl. 1 2-hr workshop. Prereq: Jr or standing in pharmacy.

546  Clerkship I U P  1  
The use of problem-solving skills to interpret and understand medical information in patient charts as related to specific disease processes. McAuley.  
Au Qtr. 1 cl or 1 2-hr workshop. Prereq: Jr standing or permission of instructor; concur: 516. This course is graded S/U.

547  Clerkship II U P  1  
On-site/ class room evaluations of drug therapy, with an emphasis on development of verbal communication skills between pharmacists and patients, and utilization of drug information resources. Casper.  
Wi Qtr. 1 cl or 1 2-hr workshop. Prereq: Jr standing or permission of instructor; concur: 517. This course is graded S/U.

548  Clerkship III U P  1  
On-site evaluation of drug therapy in hospitalized or out-patients, with an emphasis on development of communication and decision-making skills. Casper.  
Sp Qtr. 1 1 1/2-hr cl. Prereq: Jr standing or permission of instructor; concur: 516.

601  Biopharmacy I P  3  
The first in a two-course sequence which provides the fundamental background in modern molecular life science required for pharmacy studies. Priestley.  
Au Qtr. 3 1-hr cl., 1 rec. Prereq: First-year standing in Pharm D program.

602  Biopharmacy II P  3  
The second in a two-course sequence which provides the fundamental background in modern molecular life science required for pharmacy studies. Hines.  
Wi Qtr. 3 1-hr cl., 1 rec. Prereq: First-year standing in Pharm D program.

603†  Chemotherapy of Cancer U P  3  
Fundamentals of cancer chemotherapy, pharmacokinetics, and mechanism of action of anticancer agents, with emphasis on the biological, biochemical, biopharmaceutical, and pharmacological determinants of drug action. Au, Sp Qtr. 3 cl. Prereq or concur: 501 and 674, or permission of instructor.

605  Medicinal Chemistry I P  3  
An introduction to functional group properties of important drugs, heterocycles, acidity and basicity, metabolism, prediction of ionization constants and physicochemical properties of drugs. Curley.  
Au Qtr. 3 1-hr cl., 1 rec. Prereq: First-year standing in Pharm D program.

606  Medicinal Chemistry II P  3  
Chemical and biochemical principles governing the properties of drugs. Drug categories include: CNS depressants, CNS stimulants, analgesics, and cardiac drugs. Bergmeier.  
Wi Qtr. 3 1-hr cl., 1 rec. Prereq: First-year standing in Pharm D program.

607  Medical Chemistry III P  3  
Chemical and biochemical principles governing the properties of drugs. Drug categories include: cholesterol, adrenocorticoids, hormones, prostaglandins, analgesics, hypoglycemics, cancer agents, antihistamines, anticoagulants, and radiopharmaceuticals. Buergemeier.  
Sp Qtr. 3 1-hr cl., 1 rec. Prereq: First-year standing in Pharm D program.

614†  Professional Ethics P  2  
The conceptual basis and content of pharmaceutical ethics; significance of codified ethics, interprofessionally considered; differences of view underlying ethical issues; methods of encouraging compliance. Buerki.  
Sp Qtr. 1 1 1/2-hr cl. Prereq: Jr standing or permission of instructor.

616  Medical Applications of Radiopharmaceuticals and Radiopharmaceuticals P  3  
A study of the theoretical and clinical aspects of the preparation, use, control, and handling of radiopharmaceuticals used in medicine. Hinkele.  
Wi Qtr. 3 cl. Open to students with Jr standing in College of Pharmacy or School of Allied Medical Professions.

619  Nonprescription Drug Products P  3  
Didactic and practical experience in appropriate nonprescription drug product selection, monitoring, and patient information. Marcy and Clinical faculty.  
Au, Sp Qtrs. 2 2-hr cl. Prereq 518 and 674 or concur with permission of instructor.

541  Drug Delivery I P  3  
Routes of drug administration and the principles of biological barriers to drug absorption. Swain.  
Au Qtr. 3 1-hr cl., 1-hr rec. Prereq: First-year standing in Pharm D program.

622  Drug Delivery II P  3  
Introduction to the physical-chemical principles of importance to drug delivery including physical properties, transport mechanisms, solubility, stability, viscosity and surface tension. Schwendeman.  
Wi Qtr. 2 1-hr cl., 1 2-hr workshop. Prereq: First-year standing in Pharm D program.

623  Drug Delivery III P  5  
The application of physical-chemical principles to pharmacodynamics and biopharmaceutics: colloids, suspensions, emulsions, solids and topical drug delivery systems and the formulation factors affecting drug availability. Frank.  
Sp Qtr. 3 cl, 2 2-hr workshops. Prereq: First-year standing in Pharm D program.
624 Pharmaceutical Calculations P 1
Introduction to prescription terminology and pharmaceutical calculations; emphasis on measurement systems, conversions, percent preparations, units of concentrations, calculation of doses, dilutions, milliequivalents, and millimoles. Farrar and Legg.
Sp Qtr. 1 1-hr cl. Prereq: First-year standing in Pharm D program.

625 Pharmaceutical Jurisprudence P 3
A study of the laws and regulations relating to the practice of pharmacy with emphasis on cases and court decisions illustrating the pharmacist's responsibilities. Grauer and Wickham.
Au, Sp Qtrs. 2 1.1/2-hr cl. Prereq: Sr standing.

626 Drug Delivery Laboratory P 2
Laboratory reinforcement of the principles of drug delivery systems and their application to pharmacy practice. Staubus.
Sp Qtr. 1 1-hr cl, 1-3 hr lab. Prereq: First-year standing in Pharm D program.

H6501 Pharmacy Honors Seminar P 1
Presentation of pharmaceutical science and pharmacy practice topics by honors students and guest lecturers. Sp Qtr. 1 cl. Prereq: Enrollment in PHR honors program. Repeatable to a maximum of 3 or hrs. This course is graded S/U.

661 Pharmacy Practice I P 3
The first in a three-course sequence covering concepts fundamental to pharmacy practice. Topics include orientation to the profession, history, ethics, communications, and jurisprudence. Hale, Buerki, and Casper.
Au Qtr. 3 1-hr cl, 1 rec. Prereq: First-year standing in Pharm D program.

662 Pharmacy Practice II P 3
The second in a three-course sequence covering concepts fundamental to pharmacy practice with a focus on self-care and communications. Bennett and Casper.
Sp Qtr. 2 1-hr cl, 1 2-hr workshop. Prereq: First-year standing in Pharm D program.

664 Introductory Pharmacy Practice Experience P 1
Introductory experience in pharmacy practice including ambulatory, institutional, and elective settings. Cable and clinical faculty.
Au, Wi, Sp Qtrs. 4 hrs per week. Prereq: First-year standing in Pharm D program. Repeatable to a maximum of 3 or hrs. This course is graded S/U.

677 Toxicology of Mutagens, Carcinogens, and Teratogens U P G 3
Fundamentals of modern and environmental toxicology, emphasizing principles of teratology, carcinogenesis, and mutagenesis. Rathwan.
Wt Qtr. 3 cl. Prereq: Physiol 312 or 602 or permission of instructor.

681 Ocular Pharmacology P 3
A survey of the general principles of drug action and the properties of drugs affecting ocular structure and function. Patil and Uretsky.
Sp Qtr. 3 cl. Prereq: 2nd yr standing in optometry. Open only to students registered in the College of Optometry.

685 Community/Clinical Practice Externship P 5
Pharmacy students, under the supervision of college faculty and community pharmacists, gain experience in community pharmacy practice. Cable and preceptor faculty.
Su, Au, Wi, Sp Qtrs. 3 or 4 wks minimum of 40 hr/wk. Prereq: 502, 505, 518, 674; licensure by the Ohio Board of Pharmacy as pharmacy intern; malpractice insurance coverage; satisfaction of health requirements; concur: 686 and 689. This course is graded S/U.

686 Institutional/ Clinical Practice Externship P 5
Pharmacy students, under the supervision of college faculty and institutional pharmacists, gain experience in institutional (e.g., hospital, mental health facility) pharmacy practice. Cable and preceptor faculty.
Su, Au, Wi, Sp Qtrs. 3 or 4 wks minimum of 40 hr/wk. Prereq: 502, 505, 518, 674; licensure by the Ohio Board of Pharmacy as pharmacy intern; malpractice insurance coverage; satisfaction of health requirements; concur: 685 and 689. This course is graded S/U.

689 Clinical Practice in Pharmacy P 5
A basic clinical clerkship experience in various pharmacotherapeutic and clinical pharmacy practice areas with emphasis on an interdisciplinary health team approach. Cable and preceptor faculty.
Su, Au, Wi, Sp Qtrs. 4 wks minimum of 40 hrs/wk. Prereq: 502, 505, 518, 674; licensure by Ohio Board of Pharmacy as pharmacy intern; malpractice insurance coverage; satisfaction of health requirements; concur: 685 and 689. This course is graded S/U.

693 Individual Studies in the Pharmaceutical Sciences P 1-3
Laboratory and library work designed to give the qualified student an opportunity to complete an original investigation or pursue an interest in a special problem.
Su, Au, Wi, Sp Qtrs. Prereq: Jr standing, a cumulative GPA ratio of 2.50, and permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

694 Group Studies in Pharmacy U P 1-3
Group studies of selected topics in various fields of pharmacy. Prereq: Permission of instructor. Repeatable to a maximum of 12 or hrs.

695 Seminar in Clinical Pharmacy Career Pathways P 2
Discussion and analysis of career pathways in clinical pharmacy and preparation of a career plan paper. Buerki and clinical faculty.
Sp Qtr. 2 cl. Prereq: 400 and soph standing.

701 Concepts of Pharmaceutical Research I P G 3
Presentation of some basic principles and techniques used in pharmaceutical research and product development: drug stabilization, solubilization, complexation, and macromolecule interactions. Frank.
Wi Qtr. 3 cl. Prereq: 506 or equiv with written permission of instructor.

710 Pharmaceutical Biotechnology P 3
Products of biotechnology used as drugs, with an emphasis on immunoactive biomacromolecules employed in prevention, diagnosis and therapy of infectious, allergic, immunodeficiency and other diseases. Robertson.
Au Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

711 Pharmaceutical Biotechnology II P 3
Products of biotechnology used as drugs, with an emphasis on antibiotics, anticancer agents and other important natural products employed in disease therapy. Robertson.
Wi Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

712 Clinical Pharmacokinetics I P G 4
Basic concepts of drug disposition, pharmacokinetics and response kinetics, and the application of these concepts to optimizing specific drug therapy. Brackett.
Sp Qtr. 2 1/2-hr cl, 1 2-hr rec. Prereq: 506; or prereq or concur: 518 and 674; or permission of instructor.

713 Advanced Clinical Pharmacokinetics II P G 6
Anatomical and physiological basis of pharmacokinetics; emphasis on the influence of disease states on the pharmacokinetics of drugs, and drug dosage alterations in patients. Coyle.
Su Qtr. 3 2-hr cl. Prereq: 712 or equiv, and admission to Pharm D program or permission of instructor.

720 Advanced Pharmacotherapeutics P G 4
An advanced course emphasizing therapeutic principles based on medical pathophysiology, pharmacodynamics, and pharmacokinetics. Barnes and clinical faculty.
Au, Wi, Sp Qtrs. 3-5 2-hr cl. Prereq: 712 or equiv, and admission to Pharm D program or permission of instructor. Repeatable to a maximum of 12 or hrs. Three-quarter sequence.

731 Clinical Pharmacokinetics I P 4
The first in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy. Hayton and Coyle.
Au Qtr. 3 cl, 1 2-hr workshop. Prereq: Second-year standing in Pharm D program.

732 Clinical Pharmacokinetics II P 4
The second in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy. Hayton and Coyle.
Wi Qtr. 3 cl, 1 2-hr workshop. Prereq: Second-year standing in Pharm D program.

733 Clinical Pharmacokinetics III P 3
The third in a three-course sequence in clinical pharmacokinetics and pharmacodynamics and their application to pharmacotherapy. Coyle and Hayton.
Sp Qtr. 1 cl, 2 2-hr workshops. Prereq: Second-year standing in Pharm D program.
735 Drug Discovery and Drug Design P G 3
A study of the discovery and design of new drugs; topics include natural products isolation, molecular modeling, molecular targets, and biosynthesis and metabolism.
Sp Qtr. 3 cl. Prereq: Permission of instructor.

737 Advanced Pharmaceutical Analysis P G 5
The use of specialized instruments in the assay and control methods of drugs and drug preparations. Olson and Jagadesha.
Au Qtr. 3 cl. 2 3-hr lab. Prereq: Permission of instructor.

740 Principles of Toxicology I G 3
Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.
Wi Qtr. 3 cl hrs. Prereq: Biochem 615 or equiv; Physiol 312 or equiv. Not open to students with credit for Anim Sci 740 or Vet Med 740. Cross-listed in Animal Sciences and Veterinary Biosciences.

741 Principles of Toxicology II G 5
Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.
Sp Qtr. 5 cl. Prereq: 740 or Anim Sci 740 or Vet Med 740; Biochem 511 or equiv; Physiol 602 or equiv. Not open to students with credit for Anim Sci 740 or Vet Med 740. Cross-listed in Animal Sciences and Veterinary Biosciences.

743 Pathophysiology for Clinical Pharmacists
An independent study program in the pathophysiology of major human diseases associated with various organ systems. Havard and clinical faculty.
Su, Au, Wi, Sp.Ohrs. Prereq: Admission to Pharm D program and permission of the director of the independent study program in the College of Medicine. Repeatable to a maximum of 55 cr hrs. These courses are graded S/U.
743.13 Medical Immunology P 3
743.14 Behavioral Sciences P 2
743.16 Pathologic Mechanisms/Genetics P 5
743.19 Cardiovascular System P 7
743.20 Infectious Diseases P 5
743.21 Respiratory System P 3
743.22 Hematological System P 3
743.23 Gastrointestinal System P 3
743.24 Renal System P 5
743.26 Musculoskeletal System P 2
743.27 Endocrine System P 2

744 Physical Assessment P 3
Didactic and clinical instruction involving history taking and physical examination pertaining to response to drug therapy. Brackett and Clinical faculty.
Su Qtr. Prereq: Admission to PharmD program. This course is graded S/U.

745 Advanced Clinical Practice in Pharmacy P 8
Advanced clinical experience in various therapeutic and pharmacy practice areas. Clinical faculty.
Su, Au, Wi. 15's months (fulltime). Prereq: Admission to Pharm D program; 743.19, 743.20, 743.21, 743.22, 743.23, 743.24, and 743.27; or permission of instructor. Repeatable to a maximum of 64 cr hrs in any combination of decimal subdivisions. Each subdivision repeatable to a maximum of 24 cr hrs.
745.02 Drug Information Service
745.03 Poison Control/Toxicology Service
745.04 Clinical Pharmacokinetics Laboratory
745.05 Pediatric Clinical Pharmacy
745.06 Cardiovascular Clinical Pharmacy
745.07 Critical Care Clinical Pharmacy
745.08 Psychiatric Clinical Pharmacy
745.09 Oncologic Clinical Pharmacy
745.10 Renal Clinical Pharmacy
745.11 Pulmonary Clinical Pharmacy
745.12 Infectious Disease Clinical Pharmacy
745.13 Gastroenterology Clinical Pharmacy
745.14 Parenteral Nutrition
745.15 Medical/Surgical Clinical Pharmacy
745.16 Applied Pharmacokinetics Service
745.17 Specialty Clinical Pharmacy
745.18 Pharmacoconomics
745.19 Teaching Clinical Pharmacy
745.20 Internal Medicine Clinical Pharmacy
745.21 Neurology Clinical Pharmacy
745.22 Pharmaceutical Care
745.23 Anticoagulation Clinic Clinical Pharmacy
745.24 Emergency Medicine Clinical Pharmacy
745.25 Practice Management
745.26 Investigational Drug Service
745.27 Ambulatory Care Clinical Pharmacy
745.28 General Surgery Clinical Pharmacy
745.29 Pain Service Clinical Pharmacy
745.30 Transplant Clinical Pharmacy
745.31 Laboratory Clinical Pharmacy

747 Pharmacology I P 3
The first in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes. Rahwan.
Au Qtr. 3 cl. Prereq: Second-year standing is Pharm D program.

748 Pharmacology II P 3
The second in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes. Rahwan.
Wi Qtr. 3 cl. Prereq: Second-year standing is Pharm D program.

749 Pharmacology III P 3
The third in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes. Uretsky.
Sp Qtr. 3 cl. Prereq: Second-year standing is Pharm D program.

750 Pharmacology IV P 3
The fourth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes. Rahwan.
Au Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

751 Pharmacology V P 3
The fifth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug class. Uretsky.
Wi Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

752 Pharmacology VI P 3
The sixth in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes. Rahwan.
Sp Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

773 Pharmacy Practice Management I P 3
The first in a four-course pharmacy practice management sequence. Topics include the US health care and pharmaceutical distribution systems; product research, development, and promotion. Szaeibach.
Sp Qtr. 2 cl, 12-hr rec. Prereq: Second-year standing in Pharm D program.

774 Professional Practice Laboratory I P 3
The first in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references. Farrer and Legg.
Au Qtr. 2 cl, 13-hr lab. Prereq: Second-year standing in Pharm D program.

775 Professional Practice Laboratory II P 3
The second in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references. Farrer and Legg.
Wi Qtr. 2 cl, 13-hr lab. Prereq: Second-year standing in Pharm D program.

776 Professional Practice Laboratory III P 3
The third in a three-course professional practice laboratory sequence. Topics include preparation/dispensing of various dosage forms, extemporaneous compounding, and use of instruments and references. Farrer and Legg.
Sp Qtr. 2 cl, 13-hr lab. Prereq: Second-year standing in Pharm D program.

777 Pathophysiology and Therapeutics I P 5
Au Qtr. 2 cl, 32-hr workshops. Prereq: Second-year standing in Pharm D program.

778 Pathophysiology and Therapeutics II P 4
The second in a six-course sequence in pathophysiology and pharmacotherapy. Cardiovascular and renal disorders. Garnes.
Wi Qtr. 3 cl, 13-hr case conference. Prereq: Second-year standing in Pharm D program.
Pathophysiology and Therapeutics III P 4
The third in a six-course sequence in pathophysiology and pharmacotherapy. Psychiatric and other central nervous system disorders. McAuley.
Sp Qtr. 3 cl, 1 3-hr case conference. Prereq: Second-year standing in Pharm D program.

Pathophysiology and Therapeutics IV P 4
The fourth in a six-course sequence in pathophysiology and pharmacotherapy. Endocrinologic, hematologic, immunologic, gynecologic and genitourinary disorders. Knell.
Au Qtr. 3 cl, 1 3-hr case conference. Prereq: Third-year standing in Pharm D program.

Pathophysiology and Therapeutics V P 4
The fifth in a six-course sequence in pathophysiology and pharmacotherapy. Infectious diseases, respiratory, bone and joint, dermatologic, eyes/ears/nose/throat disorders. Nahata and Havard.
Wi Qtr. 3 cl, 1 3-hr case conference. Prereq: Third-year standing in Pharm D program.

Pathophysiology and Therapeutics VI P 5
The sixth in a six-course sequence in pathophysiology and pharmacotherapy. Oncologic, fluid and electrolyte, gastrointestinal, and multi-system disorders. Hinkle.
Sp Qtr. 4 cl, 1 3-hr case conference. Prereq: Third-year standing in Pharm D program.

Intermediate Pharmacy Practice Experience P 1
Intermediate experience in pharmacy practice including ambulatory, institutional and elective settings. Cable and clinical faculty.
Au, Wi, Sp Qtr. 4 hrs per week. Prereq: Third-year standing in Pharm D program. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

Special Topics in Pharmaceutical Sciences P 1
Discussion of areas of basic and clinical research in which various faculty members of the College of Pharmacy are currently involved.
Wi Qtr. 1 2-hr cl. Prereq: Pharm D II standing or permission of instructor.

Pharmacy Practice Management II P 3
The second in a four-course sequence in pharmacy practice management. Topics include client, marketing, and personnel management.
Au Qtr. 2 cl, 1 12-hr rec. Prereq: Third-year standing in Pharm D program.

Pharmacy Practice Management III P 3
The third in a four-course sequence in pharmacy practice management. Topics relate to resource management.
Wi Qtr. 2 cl, 1 12-hr rec. Prereq: Third-year standing in Pharm D program.

Pharmacy Practice Management IV P 3
The fourth in a four-course sequence in pharmacy practice management. Topics relate to the economic evaluation of pharmaceutical services. Patnack.
Sp Qtr. 2 cl, 1 12-hr rec. Prereq: Third-year standing in Pharm D program.

Isolation Techniques in Research P G 5
A study and application of selected isolation techniques for the purification of natural products or other organic mixtures. Curley.
Wi Qtr. 3 cl, 2 3-hr lab. Prereq: Chem 253 and 244 or 246 or 255, or equiv, or permission of instructor.

Pharmaceutical Jurisprudence P 3
A study of the laws and regulations relating to the practice of pharmacy. Grauer and Wochich.
Sp Qtr. 3 cl. Prereq: Third-year standing in Pharm D program.

Group Studies in Clinical Pharmacy P 1-18
Prereq: Admission to Pharm D program. Repeatable to a maximum of 50 cr hrs.

Seminar P 1
Seminar dealing with clinical pharmacy topics. Visconti and McAuley.
1 1-hr seminar. Prereq: Admission to Pharm D program or permission of instructor.

Presentation Seminar designed to develop speaking and scientific presentation abilities of Pharm D students through presentation of research and therapeutic material.
Au, Wi, Sp Qtr. 2-6 hrs. Prereq: To a maximum of 2 cr hrs.

Participation Participation in seminar on therapeutic material.
Au, Wi Qtr. This course is graded S/U.

Advanced Pharmacy Practice Experience P S-10
Advanced experience in pharmacy practice including ambulatory, institutional and elective settings. Cable and clinical faculty.
Au, Wi, Sp Qtr. 45 hrs per week. Prereq: Fourth-year standing in Pharm D program. Repeatable to a maximum of 60 cr hrs. This course is graded S/U.

Radioisotope Tracer Techniques and Radiochemistry
A survey of the properties of radioisotopes and radiation; radioisotope tracer methods and applications to pharmaceutical sciences; the preparation, standardization, and handling of radiochemicals. Braungamer.
Au Qtr. 3 cl, 2 3-hr lab. Prereq: Permission of instructor.

Principles of Radioisotope Tracer Techniques G 3
A survey of properties of radioisotopes and radiation, instrumentation used for detection of radioisotopes, and radioisotope tracer methods and applications to biomedical sciences.
Au Qtr. 3 cl. Prereq: Permission of instructor.

Laboratory in Radioisotope Tracer Techniques G 2
Laboratory applications of radioisotope tracer methodology in biomedical sciences and operations of instruments used for detection of radioisotopes.
Au Qtr. 2 3-hr labs. Concur: 800.01.

Pharmacokinetics G 4
The analysis of the absorption, distribution, and elimination of drugs, and the mathematical characterization of these processes, with emphasis on theory and application. Stausbusch.
Wi Qtr. 2 2-hr cl. Prereq: 674 and Math 152, or equiv, or written permission of instructor.

Disposition of Xenobiotics G 3
Principles and practical considerations in the study of xenobiotic pharmacokinetics and metabolism; current research approaches and techniques. Au and Wientjes.
Sp Qtr. Arr.

Drug Transport G 3
Theories and experimental approaches for the characterization of drug transport in biological and pharmaceutical systems. Hayton and Swaan.
Sp Qtr. 3 cl.

Controlled Drug Delivery G 3
Principles of the controlled release of drugs from polymer systems. Physical-chemical and engineering approaches are used to evaluate systems from experimental and theoretical viewpoints. Schwendeman.
Au Qtr. 2 11/2-hr cl arr. Repeatable to a maximum of 6 cr hrs.

Advanced Bioanalysis G
Theory and practice of quantitative pharmaceutical and biochemical analysis in biological samples with emphasis on modern methods. Chan.
Sp Qtr.

Principles of Advanced Bioanalysis G 4
2 1 1/2-hr cl. Prereq: Chem 253, 531, 532, Biochem 721.01, 721.02.

Laboratory in Advanced Bioanalysis G 2
Laboratory applications of pharmaceutical and biochemical methods. App lab. Prereq: concurs w/ 806.01, or permission of instructor.

Drug Equilibria in Biological Systems G 3
In depth evaluation of the current literature of methods and techniques of evaluating drug interactions with blood components and receptors.
2 1 1/2-hr cl.

Advanced Pharmacy G 3
A study of the methods used to predict, determine, and improve the stability characteristics of medicinal agents in dosage form.
Sp Qtr. 3 cl. Prereq: Chem 521 or 533, and permission of instructor.

Social and Behavioral Sciences in Pharmacy G 4
Client, marketing, and personnel management in pharmacy.
Au Qtr. 2 1-hr cl, 1 2-hr rec, 1 hr workshop.

Hospital Pharmacy Operations G 4
Administrative and professional principles and concepts of, and trends affecting, hospital pharmacy.
Wi Qtr. 2 1-hr cl, 1 2-hr rec. Prereq: 816.

Research Methods and Literature Evaluation G 4
Investigation of the research principles and methods involved in planning, analysis, and interpretation of studies and projects in pharmacy practice.
Wi Qtr. 2 1-hr cl, 1 2-hr rec, 1 workshop.
824 Economic Evaluation of Health Care Programs and Services  P G 4
Overview and appraisal of the state-of-the-art in the evaluation of health care programs and services. Pathak.
Sp Qtr. 2 1½-hr cl, 1 hr lab. Cross-listed in Health Services Management and Policy.

825 Drug Distribution and Public Policy  P G 4
Investigation of pharmaceutical markets with an emphasis on drug distribution and public policies affecting pharmaceutical firms. Szeinbach.
Sp Qtr. 2 1-hr cl, 1-2-hr rec, 1 workshop.

826 Advanced Topics in Pharmaceutical Administration  G 2
Investigation and analysis of selected topics in pharmaceutical administration.
Su, Au, Wi, Sp Qtrs. 3 cl. Repeatable to a maximum of 12 cr hrs.

835 Advanced Medicinal Chemistry  G 3
Chemistry of autonomic receptor sites; recent literature references on the biological, chemical, and stereochemical requirements for adrenergic and cholinergic stimulation and blockade.
Au Qtr. 3 cl. Prereq: 674 or equiv, and Chem 833; or permission of instructor.

836 Advanced Medicinal Chemistry  G 3
Selected topics in medicinal chemistry, the subject matter being drawn from the current literature.
Wi Qtr. 3 cl. Prereq: 674 or equiv, and Chem 833; or permission of instructor.

839 Problem Solving in Natural Products Chemistry  G 2
Discussion of weekly assigned problem sets in disciplines relevant to natural products chemistry.
Su, Au, Wi, Sp Qtr. 1 2-hr cl. Prereq: Chem 730, Biochem 613 or permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.

850 Seminar  G 1
Round-table discussion, oral and written reports dealing with recent advances in the pharmaceutical sciences.
Su, Au, Wi, Sp Qtrs. 1 cl. Repeatable to a maximum of 30 cr hrs.

850.01 Presentation
Presentation of oral and written reports dealing with recent advances in the pharmaceutical sciences.

850.02 Participation
Participation in round-table discussion, oral, and written reports dealing with recent advances in the pharmaceutical sciences.
This course is graded S/U.

851 Advanced Pharmacognosy  G 3
A study of research involving biosynthesis of plant constituents of pharmaceutical interest. Priestley and Robertson.
Sp Qtr. 3 cl. Prereq: Biochem 707 or Botany 631 or permission of instructor.

870 Drug Receptor Theory  G 3
A systematic examination of the ideas, notions, hypotheses, and theories that led to the development of quantitative models of drug-receptor interaction. Young.
Au Qtr. 3 cl. Prereq: Math 152 or equiv and an introductory course in pharmacology or permission of instructor.

871 Experimental Methods in Pharmacology  G 4
Qualitative and quantitative pharmacology covering the standard laboratory methods used in the screening and evaluation of drugs. McKay and Staff.
Wi Qtr. 1 2-hr cl, 1 6-hr lab. Prereq: 870 or equiv, and permission of instructor.

872 Advanced Methods in Pharmacology  G 3
Theory and practical application of specialized pharmacological approaches used for the elucidation of mechanisms of drug action. Patil and Staff.
Sp Qtr. 1 cl, 2-3-hr lab. Prereq: 871 and permission of instructor.

881 Advanced Topics in Pharmacology  G 3
A study of current advanced theories of pharmacodynamics. Staff.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 871 and permission of instructor. Repeatable to a maximum of 9 cr hrs.

884 Field Experiences in Pharmaceutical Administration  G 6
Supervised practicum in an administrative setting within the pharmaceutical industry.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 25 or hrs of course work in pharmacy administration and enrollment in pharmacy administration specialization. This course is graded S/U.

894 Group Studies in Pharmaceutical Sciences  G 1-5
Group studies of selected topics in various fields of the pharmaceutical sciences.
Su, Au, Wi, Sp Qtrs. 1-5 cl, opt lab. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

970 Supervised Project in Hospital Pharmacy  G 3
Investigation of a major problem facing a hospital pharmacy or pharmacy practice.
Su, Au, Wi, Sp Qtrs. Prereq: 2nd yr standing in hospital pharmacy specialization. Repeatable to a maximum of 9 or cr hrs. Required of all students specializing in hospital pharmacy; must be taken each qtr of 2nd yr. This course is graded S/U.

993 Individual Studies in the Pharmaceutical Sciences  G 1-5
Individual investigation of problems in one of the areas below:
A—Pharmaceutical Administration
B— Medicinal Chemistry and Pharmacognosy
C—Pharmaceutics and Pharmaceutical Chemistry
D—Pharmacology
E—Pharmacy Practice
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

999 Research in the Pharmaceutical Sciences  G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Philosophy

350 University Hall, 230 North Oval Mall, 292-7914

101 Introduction to Philosophy  U 5
Examination of major problems, such as the nature of reality, knowledge, truth, morality, and the relation of philosophy to science and religion. H101 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 100. GEC arts and hums cultures and ideas course.

H111 Mind and Its Place in Nature: Western Conceptions of the Self from Antiquity to the Present: Part I  U 5
Focuses on how changing conceptions of human self-understanding have affected developments in the sociopolitical, cultural, and economic realms, and vice-versa, close of the classical world to the modern age.
5 cl. Prereq: Honors standing or permission of instructor. GEC historical survey course.

H112 Mind and Its Place in Nature: Western Conceptions of the Self from Antiquity to the Present: Part II  U 5
Focuses on how changing conceptions of human self-understanding have affected developments in the sociopolitical, cultural, and economic realms, and vice-versa; the modern age to the 20th century.
5 cl. Prereq: H111. GEC historical survey course.

130 Introduction to Ethics  U 5
The nature of right and wrong, good and evil; the grounds of moral choice and decision; the resolution of moral conflicts. H130 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC arts and hums cultures and ideas course.

150 Introduction to Logic  U 5
Deduction and induction: principles of clear statement and valid reasoning; fallacies; and the methods by which theories and laws are established.
Prereq: Math 075 or 102 or equiv. GEC math and logical analysis course.

153 Probability, Data, and Decision Making  U 5
How to make rational decisions when confronted by uncertainty; foundational issues and techniques pertaining to probability, selection of utilities and analysis of data relevant to decision making.
Prereq: Mathematics Placement Level L, M, or R; or Math 104. GEC data analysis course.

215* Asian Philosophies  U 5
A survey including at least three of the following major philosophical systems of Asia: Hinduism, Buddhism, Jainism, Zoroastrianism, Taoism, and Confucianism. GEC arts and hums lit course.

230 Political and Social Philosophy  U 5
Philosophical bases of social and political institutions and practices; analysis of such fundamental conceptions as rights, justice, equality, political obligation, and civil disobedience.
Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.
240 Philosophical Problems in the Arts U 5
An introduction to major philosophical issues in the arts; examination of artistic intention, representation vs. abstraction, the grounds and objectives of art criticism, and the impact of cultural differences in light of their application to specific works in the various arts. H240 (honors) may be available to students enrolled in an honors program, or by permission of instructor. GEC arts and hums VPA course.

250 Symbolic Logic U 5
A formal presentation of the elements of modern and classical deductive logic, decision and proof procedures in sentential logic, functional logic, and Aristotelian logic. GEC math and logical analysis course.

255 Introduction to the Philosophy of Science U 5
A survey of the main philosophical problems relating to the natural sciences.
Prereq: 5 cr hrs in logic or math above 104, and 5 cr hrs in natural science or permission of instructor.

270 Introduction to Philosophy of Religion U 5
A philosophical analysis of the nature of religion and the foundations of religious belief.
Prereq: English 110 or 111 or equiv. GEC arts and hums cultures and ideas course.

2767 Freshman-Sophomore Seminar U 5
Topic varies; emphasis on current philosophical problems.
Prereq: Pr or soph standing, and either a 3.00 GPA, enrollment in an honors program, or permission of instructor. Not open to students with credit for H570. Repeatable to a maximum of 15 cr hrs with written permission of dept. adviser.

2941 Group Studies U 1-5
Groups of students are given an opportunity to pursue special topics not otherwise offered. Repeatable to a maximum of 15 cr hrs.

301 History of Ancient Philosophy U 5
Major figures and issues in Greek philosophy: presocratics, Socrates, Plato, Aristotle.
Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 311 or 511. GEC arts and hums lit course.

302 History of Medieval Philosophy U 5
Major figures in medieval philosophy, including Augustine, Aquinas, Duns Scotus, and Ockham.
Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 312, or 512, or 614 taken prior to Su Qtr 1990. GEC arts and hums lit course.

303 History of 17th-Century Philosophy U 5
Major figures in early modern philosophy: Descartes, Hobbes, Spinoza, Locke, and Berkeley.
Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 313, or 512 taken prior to Su Qtr 1990, or 513. GEC arts and hums lit course.

304 History of 18th-Century Philosophy U 5
Major figures in European philosophy in the 17th and 18th centuries.
Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 314 or 514. GEC arts and hums lit course.

305 History of 19th-Century Philosophy U 5
Major figures in 19th-century German idealism.
Prereq: 5 cr hrs of philos other than 150 or permission of instructor. Not open to students with credit for 515 or 516. GEC arts and hums lit course.

306 Fundamental Concepts of Existentialism U 5
Key concepts of the movement: commitment, absurdity, freedom, and death, as expressed in the works of Nietzsche, Sartre, Camus, Kierkegaard and others.
Prereq: 5 cr hrs of philos other than 150, or permission of instructor. Not open to students with credit for 217. GEC arts and hums lit course.

307 Contemporary Continental Thought U 5
Examination of contemporary continental thought including such movements as: structuralism, hermeneutics, critical theory, poststructuralism, semiotics, deconstruction, and postmodernism.
Prereq: 5 cr hrs of philos other than 150 or permission of instructor. GEC arts and hums lit course.

321 Jewish Mysticism U 5
Introduction to issues and texts in the Jewish mystical tradition, with emphasis on the Zohar, Lurianic, Kabbalah, and Hasidism. Not open to students with credit for 360.

322 Judaism and Ethics U 5
Examination of the relationships of ethics to religion in general and Judaism in particular, emphasizing the place of ethical reasoning within Judaism as a religious system.

339 Philosophical Problems in the Law U 5
Introduction to the nature of law and the philosophical and moral problems concerning law; justification of civil disobedience, criminal punishment, plea bargaining, and the enforcement of morality. Not open to students with credit for 368.

367 Contemporary Social and Moral Problems in the U.S. U 5
An intensive writing course concentrating on the analysis and evaluation of philosophical argumentation concerning contemporary social and moral problems about race, gender, class, and ethnicity.
Prereq: English 110 or 111 or equiv. and soph standing or above. Not open to students with credit for this topic under Philos 294, Su Qtr 1995. GEC second writing and social diversity course.

401 Ethical Theory U 5
Advanced introduction to the major issues in ethical theory: the relation between value and obligation, the nature and justification of moral judgment, etc.
Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 331.

455 Philosophy of Science U 5
A rigorous introduction to general methodological issues in the philosophy of science.
Prereq: 250 and either a major in philos or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor.

460 Introduction to Theory of Knowledge U 5
Survey of main philosophical positions concerning knowledge, justification, skepticism, and rationality.
Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 362 or 462.

463 Introduction to Metaphysics U 5
Survey of main philosophical positions concerning the nature of reality, persons, freedom, identity, and causation.
Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 363.

467 Introduction to Philosophy of Mind U 5
General introduction to the philosophy of mind, the mind-body problem, intentionality, and the nature of consciousness.
Prereq: Philos major, or 15 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 364 or 464.

473 Introduction to Philosophy of Language U 5
Survey of philosophical issues regarding the nature of linguistic representation and its role in thought and communication.
Prereq: 250 and 10 cr hrs of philos course work exclusive of 150 and 240, or permission of instructor. Not open to students with credit for 373.

506 Phenomenology and Existentialism UG 5
Early existentialist ideas of Kierkegaard and Nietzsche; Husserl's phenomenological method and critical analyses of works of philosophers such as Heidegger, Jaspers, Sartre, Beauvoir, and others.
Prereq: 5 cr hrs of philos exclusive of 150 and 250 or grad standing or permission of instructor. Not open to students with credit for 617.

518 Movements in 20th-Century Philosophy UG 5
Three or more of the following Anglo-American and European philosophical movements will typically be surveyed: existentialism, philosophical analysis, positivism, marxism, pragmatism, linguistic philosophy.

520 American Philosophy UG 3
The development of American philosophy: puritanism, deism, transcendentalism, and pragmatism.
Not open to students with credit for 615.

521 Topics in Jewish Philosophy UG 5
An examination of a philosophical issue in Jewish thought or of the thought of a particular author; topics vary.
Prereq: 302 or 321, or permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in 621.
530 Marxism U G 5
A general introduction to the Marxist tradition in Europe and the U.S.
Prereq: 5 cr hrs in the history of philosophy or permission of instructor. Not open to students with credit for 625.

532 Moral Problems of the Health Professions U G 5
An examination of some moral problems that arise in the health professions, along with the codes, theories, and reasoning involved in their resolution.
Prereq: 130 or 431; or permission of instructor. Designed for students in medicine, nursing, clinical psych, social work, guidance and counselling, and the health professions.

533 Environmental Ethics U G 5
Examination of the moral issues generated by the impact of human beings on the natural environment.
Prereq: 130 or 431, or permission of instructor. Not open to students with credit for 633.

553 Theory of Rational Choice U G 5
Introduction to the principles and methods of the theory of rational choice; with applications in the theory of knowledge; ethics, and social and political philosophy.
Prereq: Jr or above standing or permission of instructor.

H580 Ethical Conflicts in Health Care Research, Policy, and Practice U 5
An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice.
Prereq: Jr or above standing and either 130 or permission of instructor. Not open to students with credit for Nursing H580. Cross-listed in Nursing.

595 Theorizing Race U G 5
Introduction to issues of "race," consideration of the historical emergence and development of ideas of "race" and of racist practices, along with their contemporary formations.
Sp Qtr. 2-2 hr cr. Prereq: GEC second writing course, 230 or AAm&AS 395, or permission of instructor. Not open to students with credit for AAm&AS 595. Cross-listed in African-American and African Studies.

597 Issues of the Contemporary World U 5
Prereq: Sr standing. GEC contemporary world course.

H597.03 Interdisciplinary Perspectives on Current Issues
Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.
Not open to students with credit for English H597.03 or Poli Sci H597.03. Cross-listed in English and Political Science.

General Prerequisites for Courses Numbered 600 and 700
Not open to freshmen or sophomores. Unless otherwise indicated the prerequisites for 600- and 700-level courses are 10 hours in philosophy.

601 Ancient Philosophy U G 5
Prereq: 201 or 10 or hrs of philosophy at the 200 level; or above or grad standing in philosophy; or permission of instructor.

601.01 Plato
A survey of central philosophical themes in one or more Platonic dialogues.
Not open to students with credit for 712.

601.02 Aristotle
A survey of central philosophical themes in one or more Aristotelian treatises.
Not open to students with credit for 713.

601.03 Studies in Ancient Philosophy
Variable content; special topics in ancient Greek philosophy, including value theory, logic, metaphysics and natural science in pre-Socratic Socrates, Plato, Aristotle the Hellenistic schools or neo-Platonism. Repeatable to a maximum of 15 cr hrs.

602* Studies in Medieval Philosophy U G 5
An intensive examination of a major philosopher, school or philosophical problem of the medieval period; topics vary.
Prereq: 202 and 10 or hrs of philosophy course work at the 200 level or above; or grad standing in philosophy; or permission of instructor. Repeatable to a maximum of 15 cr hrs, including or hrs earned in 814.

603 Studies in 17th-Century Philosophy U G 5
An intensive examination of a major philosopher or philosophical problem of the rationalist period; topics vary from quarter to quarter.
Prereq: 203 and 10 or hrs of philosophy course work at the 200 level or above; or grad standing in philosophy; or written of instructor. Repeatable to a maximum of 15 cr hrs, including or hrs earned in 702.

604 Studies in 18th-Century Philosophy U G 5

604.01 Kant
An intensive examination of one or more important themes in Kant’s philosophical writings.
Prereq: 303 or 504, and 10 or hrs of philosophy course work at the 200 level or above; or grad standing in philosophy; or permission of instructor. Not open to students with credit for 722.

604.02 Selected Problems or Topics
An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter.
Prereq: 304 and 10 or hrs of philosophy course work at the 200 level or above; or grad standing in philosophy; or permission of instructor. Repeatable to a maximum of 15 cr hrs, including or hrs earned in 703.

605* Studies in 19th-Century Philosophy U G 5
An intensive examination of a major philosopher or philosophical problem of the period; topics vary from quarter to quarter.
Prereq: 305 and 10 or hrs of philosophy course work at the 200 level or above; or grad standing in philosophy; or permission of instructor. Repeatable to a maximum of 15 cr hrs, including or hrs earned in 704.

606 Studies in 20th-Century Philosophy U G 5
An intensive examination of one or more central movement in 20th-century philosophy; topics vary.
Prereq: 15 cr hrs of philosophy course work at the 200 level or above, or grad standing in philosophy or permission of instructor. Repeatable to a maximum of 15 cr hrs, including or hrs earned in 771.

612 Introduction to Cognitive Science U G 3
Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.
Prereq: Permission of instructor or a total of 12 cr hrs from at least two of the following areas: computer science, linguistics, philosophy, and psychology. Not open to students with credit for GEC 612. Cross-listed in Computer and Information Science, Linguistics, and Psychology.

630 Advanced Political and Social Philosophy U G 5
An intensive examination of issues in political and social philosophy, including democracy, civil disobedience, anarchism, totalitarianism, nature of the state, etc.
Prereq: 203 and 10 or hrs of philosophy course work at the 200 level or above; or grad standing in philosophy; or permission of instructor, English 110 or 111 or equiv.

631 Advanced Ethical Theory U G 5
An intensive examination of representative ethical systems such as egoism, hedonism, utilitarianism, and altruism.
Prereq: 301 and 10 or hrs of philosophy course work at the 200 level or above or grad standing in philosophy or permission of instructor.

638* Advanced Philosophy of Law U G 5
An examination of the nature and function of law and of such problems as the relation of law to morality and the justification of punishment.
Prereq: 305 and 10 or hrs of philosophy course work at the 200 level or above; or grad standing; or equiv or permission of instructor. Not open to students with credit for 668.

640* Advanced Esthetic Theory U G 5
Basic issues in philosophy of art: the definition of art; meaning, truth, and representation in art; the nature and basis of criticism; the criteria of interpretation of works of art.
Prereq: 15 cr hrs of philosophy course work at 200 level or above; or grad standing in philosophy; or permission of instructor. Not open to students with credit for 641.

650 Advanced Symbolic Logic U G 5
Introduction to the metalanguage of first-order and predicate logic; axiomatic development of propositional and predicate logic; model theory; completeness, and Lowenheim-Skolem theorems.
Prereq: 250.

652* Nonclassical Logic U G 5
Study of selected systems of nonclassical logic, such as entailment systems, modal, many-valued, epistemic, deontic, implicative, erotetic, tense, and free logics.
Prereq: 650. Repeatable to a maximum of 10 cr hrs.

653* Inductive Logic and Probability U G 5
An analysis of selected systems of inductive inference, the probability calculus and its interpretations; confirmation theory.
Prereq: 150 or permission of instructor.
654^ Philosophy of Logic and Mathematics U G 5
Analysis of basic concepts used in logic and in philosophical claims about logic and mathematics, such as: proposition, logical truth, mathematical objects, and necessity.
Prereq: 650.01 or permission of instructor. Not open to students with credit for 674.

655 Advanced Philosophy of Science U G 5
A study of the nature and structure of scientific concepts, laws, and theories; appraisal of methodologies, presuppositions, and frames of reference in science.
Prereq: 250 and 10 cr hrs of philsos course work at the 300 level or above (preferably 455); or 250 and grad standing in philsos; or permission of instructor. Not open to students with credit for 674.

660 Advanced Theory of Knowledge U G 5
A survey of major epistemological problems: the possibility, origin, foundation, structure, methods, limits, types, and validity of knowledge.
Prereq: 250 and 10 cr hrs of philsos course work at the 300 level or above (preferably 460); or grad standing; or permission of instructor.

663 Advanced Metaphysics U G 5
A survey of major metaphysical problems: categories, universals, substance and process, causality and law, space and time, metaphysical presuppositions of knowledge.
Prereq: 250 or 10 cr hrs of philsos course work at the 300 level or above (preferably 463); or grad standing; or permission of instructor.

667 Advanced Philosophy of Mind U G 5
Classical and contemporary approaches to the nature of mind, mind-body, other minds, intentionality, and other problems.
Prereq: 15 cr hrs of philsos course work at the 300 level or above (preferably 467); or grad standing in philsos; or permission of instructor. Not open to students with credit for 767.

670 Philosophy of Religion U G 5
A study of religious concepts and problems; the idea and nature of God, of humans, their relation to the world and human destiny.
Prereq: 10 or hrs of philsos course work at the 300 level or above; or grad standing; or permission of instructor. Not open to students with credit for 675.

672^ Philosophy in Literature U G 5
Philosophical problems as reflected in classics of literature, such as: the Greek dramatists, Shakespeare, Voltaire, T. S. Elliott, Proust, and Tolstoy.
Prereq: 10 cr hrs of philsos course work at the 300 level or above; or grad standing, or permission of instructor.

673 Advanced Philosophy of Language U G 5
Basic problems and results in the philosophy of language, concentrating on theories of reference, theories of meaning, and theories of language-use (speech-acts, implication, etc.).
Prereq: 250 and 10 credit hrs of philsos course work at the 300 level or above (preferably 473); or grad standing in philsos; or permission of instructor.

H678^ Jr-Senior Proseminar U G 3-5
Topics vary; emphasis on recent philosophical writing in some specific area or on some specific problem.
Prereq: Honors level standing and 10 or hrs in philsos course work at or above the 300 level; or permission of instructor. Repeatable to a maximum of 15 cr hrs (including cr hrs earned in H670) with written permission of dept honors adviser.

693 Individual Studies U G 1-10
Prereq: Permission of depl chairperson. Students ordinarily earn from 1 to 5 cr hrs, but honors students may earn up to 10 cr hrs. This course is graded S/U.

694^ Group Studies U G 1-15
Prereq: Permission of chairperson. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Prereq: Written permission of depl chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 First-Year Seminar G 5
A topically variable introduction to advanced philosophical methodology. Open only to first-year philosophy grad students.

737 Proseminar in Cognitive Science U G 2
An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Prereq: Cptr/inf 612, Linguist 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Linguistics, Psychology, and Speech and Hearing Science.

750^ Advanced Logical Theory U G 5
Topics include formal arithmetic, recursive functions, Turing machines, Gödel's incompleteness theorems, Church's thesis, arithmetical truth, logical paradoxes, and higher-order logic.
Prereq: 250 and 650. Repeatable to a maximum of 15 cr hrs. maximum of 15 cr hrs.

H783 Honors Research U 3-5
A program of reading arranged for each student, with individual conferences, reports, and papers.
Prereq: 4th yr standing with a grade of A in at least half of the philsos courses taken and with an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the BA with distinction in philsos. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

General Prerequisites for Courses Numbered 800 and 900
Unless otherwise indicated the prerequisites for 800- and 900-level courses are acceptable foundation courses either in general philosophy, logic and ethics, or history of philosophy, and in some cases in all these subjects.

800 Current Philosophical Literature G 1
Current philosophical journal articles will be read and discussed. Repeatable to a maximum of 6 cr hrs.

801 Seminar in the History of Philosophy G 5
Prereq: Grad standing in philsos or permission of instructor. Repeatable to a maximum of 30 cr hrs, including cr hrs earned in 811.

830 Seminar in Value Theory G 5
Prereq: Grad standing in philsos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

850 Seminar in Logic G 5
Prereq: Grad standing in philsos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

855 Seminar in Philosophy of Science G 5
Prereq: Grad standing in philsos or permission of instructor. Repeatable to a maximum of 30 cr hrs, including cr hrs earned in 877.

860 Seminar in Theory of Knowledge G 5
Prereq: Grad standing in philsos or permission of instructor. Repeatable to a maximum of 30 cr hrs, including cr hrs earned in 861.

863 Seminar in Metaphysics G 5
Prereq: Grad standing in philsos or permission of instructor. Repeatable to a maximum of 30 cr hrs, including cr hrs earned in 864.

873 Seminar in Philosophy of Language G 5
Prereq: Grad standing in philsos or permission of instructor. Repeatable to a maximum of 30 cr hrs.

875 Seminar in the Philosophy of Religion G 5
Repeatable to a maximum of 15 cr hrs.

899 Interdepartmental Seminar G 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Prereq: Permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

993 Individual Studies G 2-15
Doctoral students may register for individual study in areas not normally covered by courses.
Prereq: An MA degree or at least 50 cr hrs of grad study, and permission of depl chairperson. This course is graded S/U.
599 Research in Philosophy  G Arr
Research for thesis or dissertation purposes only.
This course is graded S/U.

Physical Medicine and Rehabilitation
1012 Dodd Hall, 480 W. 9th Avenue, 293-3801

736* Clinical and Physiologic Bases of Physical Treatment
P G 3
The indications for, and choice of, physical modalities. Colacich and staff.
Au Qtr. 2 11/2-hr cl. Prereq: Grad or professional status and written
permission of instructor.

745 Biophysical Basis of Physical Treatment  P 6, 12, 18
The student will design and conduct a laboratory or library research
problem involving the biophysical aspects of physical diagnosis or treatment.
Colacich.
1, 2, or 3 months; offered all months. Prereq: Grad or professional standing
and permission of instructor. This course is graded S/U.

750* Natural History of Disability  P G 3
An analysis of the nature, patterns and evaluation of disability, the
processes involved, and the factors influencing its course. Clairmont and
staff.
Su Qtr. (even years) 2 1 1/2-hr cl. Prereq: Grad or professional status and written
permission of instructor.

780 Basic Prosthetics and Orthotics  P G 3
In-depth study of prosthetics and orthotics including evaluation of the
patient, indications for fitting of specific devices, and components, fabrication
techniques, and follow-up. Levy and staff.
Sp Qtr. 2 1 1/2-hr cl. Prereq: Grad or professional standing and written
permission of instructor.

770 Instrumentation, Neurophysiology, Clinical Aspects of
Electromyography  P G 3
In-depth study of the instrumentation and correlation of neurophysiology
and clinical aspects of electromyography, including excitable membranes,
biological potentials, and nerve stimulation in clinical disorders. Clinchot
and staff.
Wi Qtr. 2 1 1/2-hr cl. Prereq: Grad or professional status and written
permission of instructor.

780* Psychological Aspects of Physical Disability and its
Management by Physicians  P G 3
Designed to synthesize and summarize various aspects of advances in the
behavioral sciences which have practical application to the rehabilitation
of physical disabilities. Arnett and staff.
Su Qtr. (odd years) 2 1 1/2-hr cl. Prereq: Grad or professional status and written
permission of instructor.

993 Individual Studies in Physical Medicine  G 3-5
Minor investigations using electrodagnostic techniques; biophysical,
physiologic, and therapeutic effects of physical agents, and other medical
rehabilitation techniques. Mslyw.
Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission of
instructor. Repeatable to 15 hrs. This course is graded S/U.

999 Research in Physical Medicine and Rehabilitation  G Arr
Research for thesis purposes only. Matkovic.
Su, Au, Wi, Sp Qtrs. Prereq: Grad or professional standing and permission
of instructor. This course is graded S/U.

Physical Therapy
School of Allied Medical Professions
306 School of Allied Medical Professions Building, 1583 Perry Street,
292-5021

480 Procedures I  U 5
Professional orientation: introduction to the hospital setting and patient care; principles and techniques of basic body mechanics; bandaging and
therapeutic massage.
Au Qtr. 3 cl, 2 2-hr lab. Prereq: Permission of instructor.

481 Procedures II  U 6
Agents used in physical therapy: mechanical and physical properties;
therapeutic application and physiological effects related to patients.
Wi Qtr. 4 cl, 2 2-hr lab. Prereq: Permission of instructor.

495 Medical Kinesiology  U 5
Biomechanics and pathomechanics in the analysis of human motion; emphasis on clinical relationships.
Wi Qtr. 4 cl, 2 2-hr lab. Prereq: Permission of instructor.

510 Clinical Orientation and Preparation for Clinical
Education  U 2
2 1-hr cl. Prereq: Admission to physther. Not open to students with credit
for any decimalized number under 565.

510.01 Clinical Decision-Making I
Introduction to problem solving, documentation, and professional ethics.
Au Qtr.

510.02 Clinical Decision-Making II
Case presentations at clinical sites, problem solving, chart review, and
documentation.
Wi Qtr.

510.03 Clinical Decision-Making III
Case presentations at clinical sites, advanced problem solving, and
documentation.
Sp Qtr.

512 Introduction to Clinical Education  U 2
Introduction to the principles and process of clinical education, legal issues
and professional conduct in the physical therapy profession.
Sp Qtr. 2 1-hr cl. Prereq: Admission to physther.

541 Therapeutic Exercise I  U 6
Basic principles and techniques of therapeutic exercise related to physical
and medical sciences.
Au Qtr. 4 cl, 2 2-hr labs. Prereq: Permission of instructor.

542 Therapeutic Exercise II  U 6
Rehabilitation procedures for maximum restoration of the disabled;
functional relationships and principles associated with functional exercise
and specialized equipment.
Wi Qtr. 4 cl, 2 2-hr labs. Prereq: Permission of instructor.

543 Therapeutic Exercise III  U 5
Theory and technique of exercise for the neurologically handicapped with
carry-over into all areas of disability; integration and correlation of
therapeutic exercise approaches.
Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Permission of instructor.

551 Anatomical Clinical Presentations  U 2
Integration of anatomical, neuroanatomical, and kinesiological information
obtained in previous courses to review, discuss, and problem solve clinical
presentations or case studies.
Wi Qtr. 2 1-hr cl. Prereq: Sr standing in division and permission of
instructor. This course is graded S/U.

560 Aspects of Human Performance and their Management by
Physical Therapist  U 3
Emphasis on health as a continuum, the physiology and benefits of aerobic
exercise, and an introduction to cardiac rehabilitation. 
Sp Qtr. 3 cl. Prereq: Permission of instructor.

595 Seminar U 1-3
Conferences, group discussions, and presentations of selected topics.
Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

610 Clinical and Professional Practice Issues I  U 3
Clinical and professional practice issues, learning and work styles,
leadership, conflict management, and reflective thinking.
Au Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

612 Clinical and Professional Practice Issues II  U 3
Clinical issues, practice issues, the legislative process, and funding
mechanisms for clinical services.
Wi Qtr. 3 1-hr cl. Prereq: Admission to PhysTher.

615 Clinical and Professional Practice Issues III  U 3
Clinical issues: terminal clinical assignments, preparation of resumes, and
entry into the work setting.
Sp Qtr. 3 cl. 2 2-hr cl. Prereq: 465, CBN&Anat 201 or equiv.; or permission of
instructor.

620 Integrative Approach to Musculoskeletal
Evaluation  U G 5
Musculoskeletal evaluation procedures and techniques, their integration,
interpretation, and application as a foundation for program planning in
physical therapy.
Sp Qtr. 3 cl, 2 2-hr cl. Prereq: 495, CBN&Anat 201 or equiv.; or permission of
instructor.

630 Neuroscientific Basis of Rehabilitation in Physical
Therapy  U G 4
The neuroanatomical, physiological, and developmental basis of
rehabilitation procedures used in physical therapy for the management of
neurologically impaired persons.
Au Qtr. 4 cl. Prereq: 2nd yr standing in physther or permission of instructor.
304  Physical Therapy

637  Pediatric Neurologic Physical Therapy  U  G  3
Physical therapy management of the child with neurologic dysfunction.
Sp Qtr. 3 cr. Prereq: Sr standing in phyther or grad standing in all med and
permission of instructor.

645  Topics in Geriatrics  U  G  3
The aging process and its impact on physical and functional abilities and
needs of the older adult
Sp Qtr. 2 cl and 1 1-hr discussion. Prereq: Sr standing in phyther or
permission of instructor.

Programming for Severe Physical Impairments
See Ed PAES 676—Background information and survey of programmatic
considerations related to physical, motor, and fitness training of the
severely handicapped.

The Parent/Professional Partnership
See ED-PAES 677—Designed to help educators acquire knowledge and
skills necessary to assist parents in facilitating the development, education,
and socialization of severely handicapped children.

689  Clinical Experience in Physical Therapy  U  2-4
Supervised provision of physical therapy services in a variety of clinical
practice settings.
Minimum 4 weeks; and maximum 8 weeks; 40 hrs/week. Prereq: Admission
to phyther and permission of instructor. Repeatable to a maximum of 16
hr cr hrs; subdivisions not repeatable. Minimum of 24 weeks of clinical
experience required for completion of program. These courses are graded
S/U.

689.01  Clinical Experience I
Su Qtr. Prereq: Completion of 1st professional year in phyther curriculum.
Not open to students with credit for 515.

689.02  Clinical Experience II
Su, Au, Wi, Sp Qtrs. Prereq: Completion of 2nd professional year in
phyther curriculum. Not open to students with credit for 685.

689.03  Clinical Experience III
Su, Au, Wi, Sp Qtrs. Prereq: Completion of 2nd professional year in
phyther curriculum. Not open to students with credit for 685.

689.04  Clinical Experience IV
Su, Au, Wi, Sp Qtrs. Prereq: Completion of 2nd professional year in
phyther curriculum. Not open to students with credit for 685.

693  Individual Studies  U  G  1-15
Guided study or individual readings, research, or experiences related to
phyther.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Admission to phyther or permission of
instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

720  Advanced Techniques of Manual Therapy  G  4
A comprehensive study of the normal anatomy and function of the lumbar
pelvic region and techniques of managing pathologic conditions associated
with this area.
Au Qtr. 2 cl, 2 2-hr lab. Prereq: Permission of instructor.

730  Advanced Concepts in Neuromotor Control  G  3
Critical analysis of neuromotor systems, motor control, and motor
dysfunction.
Wi Qtr. 1 1/2-hr cl. Prereq: 630 or equiv or permission of instructor.

785  Seminar G  1-3
Discussion of selected topics.
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a
maximum of 8 cr hrs. This course is graded S/U.

Reactions and Adjustment to Disability
See ED-PAES 864—A study of individual reactions to various disabling
conditions, the adjustment process, cultural norms and expectations, and
responses to the rehabilitation process.

Consulation in the Human Services Profession
See ED-PAES 875—The consultation process, models, roles, skills, and
outcomes for human services personnel will be addressed; emphasis is
placed on extending theoretical and practical knowledge.

889  Advanced Clinical Practicum  G  2-4
Advanced clinical experiences in specialized areas of physical therapy
practice.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable
to a maximum of 8 cr hrs. This course is graded S/U.

Physics

1012  Smith Laboratory, 174 West 18th Avenue, 292-5713

100  Physics and Humans  U  5
An introduction to the physics of the world of everyday experience through
study of selected topics.
Su, Au, Wi, Sp Qtrs. Not offered at Columbus campus. Not intended for
ASC BS students. NS Admis Cond course.

100.01  Vibrations and Waves
1 lec; 2 2-hr disc.

100.02  Energy
1 lec; 2 2-hr disc.

101  Nature of the Physical World  U  5
An elementary description of the physical world emphasizing scientific
method and contemporary viewpoints; laboratory work and demonstrations.
Au, Wi Qtrs. Not offered at Columbus campus. 4 cl, 1 2-hr lab. Prereq:
Math 075 or 076 or 104 or placement in math course code R. Not intended for
ASC BS students. NS Admis Cond course. GEC phys sci course.

102  Nature of the Physical World  U  5
Continuation of 101.
Wi, Sp Qtrs. Not offered at Columbus campus. 4 cl, 1 2-hr lab. Prereq: 101.
Not intended for ASC BS students. NS Admis Cond course. GEC phys sci course.

103  The World of Energy I  U  5
An examination of the concept of energy with its personal and global
impact using the hands-on discovery mode.
Au, Sp Qtrs. 1 cl, 2 2-hr rec. Intended for non-science majors. Not open to
students with credit for 100.02. NS Admis Cond course. GEC phys sci course.

104  The World of Energy II  U  5
Continuation of 103.
Su, Wi Qtrs. 1 cl, 2 2-hr rec. Prereq: 103. Intended for non-science majors.
Not open to students with credit for 100.02. NS Admis Cond course.
GEC phys sci course.

106  Physics by Inquiry: Properties of Matter  U  5
Properties of matter and experimental physics for undergraduates
contemplating a teaching career.
Wi Qtr. 2 2-hr cl. Not open to students with credit for 201. Intended for non-
science majors, especially those interested in education. NS Admis Cond
course. GEC phys sci course.

107  Physics by Inquiry: Electric Circuits  U  5
Electric phenomena, electric circuits, and experimental physics for
undergraduates contemplating a teaching career.
Sp Qtr. 2 3-hr cl. Not open to students with credit for 202. Intended for non-
science majors, especially those interested in education. NS Admis Cond
course. GEC phys sci course.

108  Physics by Inquiry: Concepts of Light with Applications to
Optics  U  5
Principles of light and optics with applications to real-world phenomena
such as astronomy appropriate for undergraduates contemplating a
-teaching career.
Au Qtr. 2 3-hr cl. NS Admis Cond course. GEC phys sci course.

109  Preparation for Physics  U  4
Introduction to elementary concepts of mechanics with emphasis on
correction of misconceptions and elementary mathematical methods in
physics.
Au, Wi Qtrs. 4 cl. Prereq or concur: Math 150 or eligibility for Math 151.
Recommended for students with little or no prior physics experience.

111  General Physics: Mechanics and Heat  U  5
Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: Eligibility for Math 130. This
course is available for EM credit. NS Admis Cond course. GEC phys sci course.

112  General Physics: Electricity, Magnetism, and Light  U  5
Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 111. This course is available
for EM credit. NS Admis Cond course. GEC phys sci course.

113  General Physics: Modern Physics  U  5
Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr lab. Prereq: 112. This course is available
for EM credit. NS Admis Cond course. GEC phys sci course.

131  Introductory Physics: Electrons and Motion  U  5
Major concepts of physics from a contemporary point of view; for students
in physical sciences, mathematics, or engineering.
Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 1 entrance unit of physics or
chemistry and Math 152 or concurrent Math 161 or higher. This course is available
for EM credit. NS Admis Cond course. GEC phys sci course.
H131 Honors Physics: Particles and Motion U 5
Major concepts of physics from a contemporary point of view; challenging, flexible format; includes honors lab; for students strong in physical sciences, mathematics, or engineering.
Au Qtr. 5 cl, 1 2-hr lab. Prereq: 1 entrance unit of physics or chem; and Math 151 and concour Math 152, or concour Math 161 or higher, or written permission of instructor. NS Admis Cond course. GEC phys sci course.

132 Introductory Physics: Electricity and Magnetism U 5
Continuation of 131.
Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 131; and Math 152 and concour Math 153, or concour Math 162 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

H132 Honors Physics: Electricity and Magnetism U 5
Continuation of H131.
Wi Qtr. 5 cl, 1 2-hr lab. Prereq: H131 with grade of C or better; and Math 152 and concour Math 153, or concour Math 162 or higher, or written permission of instructor. NS Admis Cond course. GEC phys sci course.

133 Introductory Physics: Thermal, Waves, and Quantum Physics U 5
Continuation of 132.
Su, Au, Wi, Sp Qtrs. 5 cl, 1 2-hr lab. Prereq: 132; and Math 153 or Math 162 or higher. This course is available for EM credit. NS Admis Cond course. GEC phys sci course.

H133 Honors Physics: Thermal Physics, Waves, and Quantum Physics U 5
Continuation of H132.
Sp Qtr. 5 cl, 1 2-hr lab. Prereq: H132 with grade of C or better, and Math 153 or Math 162 or higher, or written permission of instructor. NS Admis Cond course. GEC phys sci course.

161 The Building Blocks of Creation I U 5
An overall perspective on our physical universe from the historical development of fundamental physics concepts to their impact on culture and society.
Au Qtr. 5 cl. Prereq: Math 075 or equiv. GEC phys sci course. NS Admis Cond course.

162 The Building Blocks of Creation II U 5
Continuation of 161.
Wi Qtr. 5 cl. Prereq: 161 and Math 075 or equiv. GEC phys sci course. NS Admis Cond course.

261 Dynamics of Particles and Waves I U 4
Vectors and kinematics; foundations of Newtonian mechanics; momentum, work, and energy; conservative and nonconservative forces; potentials; angular momentum; rotation about a fixed axis.
Au Qtr. 4 cl. Prereq or concur: 132. Not open to students with credit for 525.

262 Dynamics of Particles and Waves II U 4
Rigid body motion; noninertial systems and fictitious forces; central force motion; the special theory of relativity; relativistic kinematics; relativistic momentum and energy.
Wi Qtr. 4 cl. Prereq: 261 and prereq or concur 133; and concour Math 254 or Math 263. Not open to students with credit for 525.

263 Dynamics of Particles and Waves III U 4
Introduction to quantum systems; photons; the Bohr atom; matter waves.
Sp Qtr. 4 cl. Prereq: 262, and Math 254 or Math 263.

294 Group Studies U 1-6
Designed to permit groups of students the opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr or hrs.

295 Introductory Seminar U 1
Introduction to departmental research programs and to selected topics of interest in contemporary physics.
Au Qtr. 1 2-hr cl. Prereq: 131. This course is graded SU.

367 Uses of Science in Solving Problems of Society U 5
Energy, environment, and the arms race are examined using the methods of science; focuses on interaction of science and technology; and social and ethical implications of choices.
Au and/or Sp Qtrs at Marion campus, qtrs vary at Columbus campus. 5 cl. Prereq: Math Placement S or higher; 1 5-hr 100-level course in either astron, bio sci, chem, geol sci, or physics, English 110 or 111 I or equiv. Not open to students with credit for Phys Sci 180, GEC second writing and phys sci course.

416 Methods of Experimental Physics U 4
Introduction to the experimental techniques of physics and the statistical analysis of data, through lectures and a variety of experiments.
Au, Wi, Sp Qtrs. 1 1-hr cl, 2 2-hr labs. Prereq: 131, 132, and 133. GEC 91A analysis course.

503 General Meteorology U 4
A description of weather phenomena and the physical processes underlying them; intended primarily for nonphysics majors.
Sp Qtr. Prereq: 111 or 131 or permission of instructor.

516 Intermediate Physics Laboratory U 4
Selected intermediate level introduction to experimental physics from basic areas of physics.
Au, Wi, Sp Qtrs. 2 2-hr labs. Prereq: 113 or 133 or permission of instructor. Not open to physics majors or grad students in physics. Repeatable to a maximum of 12 cr or hrs.

517 Introductory Electronics for Physicists U 4
Intermediate level introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience.
Au, Wi, Sp Qtrs. 1 2-hr cl, 2 2-hr labs. Prereq: 133 or permission of instructor. Not open to students with credit for 617; or to grad students in physics.

525 Dynamical Models U 4
Dynamical model of particle motion; behavior of linear systems; periodic and transient phenomena in mechanical and electrical systems; central force problems; frames of reference.
Sp Qtr. 4 cl. Prereq: 133 and Math 255 or equiv. Not open to students with credit for 262.

555 Fields and Waves I U 4
Introduction to the description of electrostatic fields; dielectrics; boundary-value problems.
Au Qtr. 4 cl. Prereq: 133 and prereq or concur 261, and Math 415 or Math 255, and Math 513 or 551 or 416.

593 Individual Studies U 2-5
Independent reading, study, or laboratory work at an intermediate level.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr or hrs. This course is graded SU.

594 Group Studies U 1-6
Group studies of special topics not otherwise offered.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Satisfactory intermediate level courses in physics and permission of instructor. Repeatable to a maximum of 15 cr or hrs.

596 Senior Seminar: Writing and Speaking about Physics and Astronomy U 3
Seminar on selected topics in physics and astronomy; training in written and oral presentations; third writing course.
Au, Sp Qtrs. 4 cl. Prereq: 262 or equiv, Math 255 or 415, second writing course, and jr or sr standing. Not open to students with credit for 595. GEC third writing course.

616 Advanced Physics Laboratory U 4
Experiments selected from all areas of physics; independent work emphasized.
Au, Wi, Sp Qtrs. 2 3-hr labs. Prereq: 263, 555, and 416 or Stat 245, grad standing or permission of instructor; 631 recommended. Repeatable to a maximum of 24 cr or hrs.

617 Electronics for Physicists U 5
An intensive introduction to electronic circuits, devices, and instrumentation with emphasis on laboratory experience.
Su, Au, Wi, Sp Qtrs. 1 2-hr cl, 2 2-hr labs. Prereq: 263 or grad standing.

621 Statistical Physics I U 4
Thermodynamics and statistical mechanics; applications to noninteracting classical and quantum systems.
Au Qtr. 4 cl. Prereq: 263.

622 Statistical Physics II U 4
Interacting systems, special states of matter, critical phenomena and phase transitions.
Wi Qtr. 4 cl. Prereq: 621 or equiv.

631 Introductory Quantum Mechanics I U 4
Introduction to quantum mechanics, including its historical background, the Schroedinger equation, solutions of one-dimensional scattering and bound state problems.
Au Qtr. 4 cl. Prereq: Course in modern physics beyond 133 and Math 255 or 415 and Math 566 or 571.
632 Introductory Quantum Mechanics II U G 4
Continuation of 631; the Schrödinger equation in three dimensions, angular momentum, the hydrogen atom, Dirac notation, and time-independent perturbation theory.
Wi Qtr. 4 Cr. Prereq: 631.

633 Introductory Quantum Mechanics III U G 4
Continuation of 632; time-dependent perturbation theory, scattering theory and the Born approximation, multi-electron atoms, and selected further applications.
Sp Qtr. 4 Cr. Prereq: 632.

656 Fields and Waves II U G 4
Continuation of 555; magnetic fields of steady currents; induction, Maxwell's equations; plane waves; special relativity.
Wi Qtr. 4 Cr. Prereq: 555 or equiv.

657 Fields and Waves III U G 4
Continuation of 656; plane waves in matter; physical optics; coherence, interference, diffraction and dispersion.
Sp Qtr. 4 Cr. Prereq: 656 or equiv.

664 Theoretical Mechanics U G 4
Development of Lagrangian mechanics, inertia and stress tensors, rigid body rotations and introduction to the mechanics of continuous media.
Sp Qtr. 4 Cr. Prereq: 262 and Math 255, concord Math 513 or 551.

670 Physics for In-Service Teachers U G 1-15
Designed to deepen teachers' understanding of basic physical concepts and methods of treatment of selected topics; includes lectures, discussions, demonstrations, and individualized laboratory work.
Su Qtr. Prereq: 15 cr hrs in physics, teaching experience, and permission of instructor. Intended for secondary school science teachers. Repeatable to a maximum of 30 cr hrs.

681 Principles of Stellar Evolution and Nucleosynthesis U G 4
Physics of stellar structure, evolution, and nucleosynthesis.
Wi Qtr. 5 Cr. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for Astron 641 or 651 or 681. Cross-listed in Astronomy.

682 Introduction to Cosmology U G 5
Structure and evolution of the Universe.
Wi Qtr. 5 Cr. Prereq: Math 255 or 415; Physics 263; Physics 621 (or concurrent) recommended; or permission of instructor. Not open to students with credit for Astron 642 or 682. Cross-listed in Astronomy.

693 Individual Studies U G 1-15
Designed to give a properly qualified student opportunity for independent reading, study, or laboratory work in a specialized field of interest.
Su, Au, Wi, Sp Qtrs. Prereq: Satisfactory advanced courses in experimental and theoretical physics and permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

730 Methods of Theoretical Physics I U G 4
Sturm-Liouville theory of orthogonal functions; boundary value problems in Cartesian, cylindrical, spherical coordinates; Fourier series, Legendre polynomials, spherical harmonics, and Bessel functions.
Su Qtr. 4 Cr. Prereq: Math 601, and 701 or equiv.

731 Methods of Theoretical Physics II U G 4
Convergence of infinite series; complex variables, analytic properties and expansions, calculus of residues, gamma function, Hankel functions, modified Bessel functions, other special functions, differential equations.
Wi Qtr. 4 Cr. Prereq: Math 601 and 701 or equiv.

780 Topics in Contemporary Physics U G 4
Experimental and theoretical aspects of areas of current interest in physics.
3 Cr. Prereq: 633 or grad standing or permission of instructor.

780.02 Elementary Particle Physics
Sp Qtr.

780.04 Atomic and Molecular Physics
Wi Qtr.

780.05 Nuclear Physics
Wi Qtr.

780.06 Condensed Matter Physics
Sp Qtr.

780.20 Special Topics

785 Special Topics Seminar U G 1
A survey of current research problems in physics.
Au, Wi Qtrs. Prereq or conc: 631 or equiv. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

801 Seminar in Physics G 1
Seminars will be conducted by various members of the staff on topics of current interest in their fields of specialization; students will participate in the presentation and discussion of material.
Su, Au, Wi, Sp Qtrs. Prereq: Acceptable specialized courses and permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

816 Topics in Physics G 3-6
Laboratory and/or theoretical work on an individual basis on topics of current interest.
Su, Au, Wi, Sp Qtrs. Prereq: 616 or equiv and permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

821 Classical Dynamics G 4
Lagrangian dynamics, variational principles, Hamilton's equations, canonical transformations, symmetries and conservation laws, small oscillations, normal coordinates, and classical fields.
Sp Qtr. 4 Cr. Prereq: 664 or equiv.

822 Elasticity and Fluid Mechanics G 4
Elasticity of solids; stress and strain tensors, dislocations; fluid mechanics; ideal and viscous fluids, chaos, and turbulence.
Au Qtr. 4 Cr. Prereq: 821 or permission of instructor.

827 Quantum Mechanics I G 5
Postulates and Schrödinger equation, linear vector spaces, one-dimensional problems, path-integral formulation of quantum theory; multiparticle systems, symmetry, orbital angular momentum, and central potentials.
Au Qtr. 4 Cr. Prereq: 633 or equiv or permission of instructor.

828 Quantum Mechanics II G 5
Spin angular momentum and its dynamics; addition of angular momenta; variational method; time-dependent and time-independent perturbations, semiclassical treatment of electromagnetic radiation.
Wi Qtr. 4 Cr. Prereq: 827.

839 Quantum Mechanics III G 5
Quantized electromagnetic radiation; scattering theory; density matrix; Dirac equation, relativistic hydrogen atom; Hartree-Fock theory, atoms, and molecules.
Sp Qtr. 4 Cr. Prereq: 828.

830 Quantum Mechanics IV G 4
Systems with several electrons, exclusion principle; applications to atoms and molecules, and to scattering; Hartree-Fock approximation; Dirac equation for free electrons and for hydrogen.
Au Qtr. 4 Cr. Prereq: 829.

831 Advanced Quantum Mechanics G 4
Symmetry groups; Lorentz transformations; field quantization; S-matrix theory; general perturbation theory.
Wi Qtr. 4 Cr. Prereq: 830.

834 Electromagnetic Field Theory I G 4
Boundary value problems involving static electric and magnetic fields, fields in material media.
Au Qtr. 4 Cr. Prereq: 656 or equiv.

835 Electromagnetic Field Theory II G 4
Maxwell's equations, electromagnetic waves, radiation by simple systems, wave guides.
Wi Qtr. 4 Cr. Prereq: 834 or permission of instructor.

836 Electromagnetic Field Theory III G 4
Special theory of relativity, dynamics of relativistic particles, collisions between charged particles, energy losses, scattering, radiation by moving charges.
Sp Qtr. 4 Cr. Prereq: 835 or permission of instructor.
Physiological Optics

846 Statistical Physics I  G 4
Physical thermodynamics and introduction to statistical physics; fundamental postulates, entropy, thermodynamic potentials and changes of phase; microscopic expression for entropy and basic of classical ensemble theory.
Au Qtr. 4 cl. Prereq: 622 and 684 or equiv.

847 Statistical Physics II  G 4
Canonical and grand ensembles; Quantum statistical mechanics; density matrices, partition functions, Bose and Fermi gases; Debye specific heat; black-body radiation; Bose-Einstein condensation; interacting systems.
Wk Qtr. 4 cl. Prereq: 846 and 828.

848 Advanced Statistical Physics  G 4
Interacting systems; Ising and Heisenberg models of magnetism, theory of dense gases and liquids, phase transitions and critical phenomena; nonequilibrium statistical physics, Boltzmann equation.
Au Qtr. 4 cl. Prereq: 828 and 847, or permission of instructor.

880 Advanced Topics  G 3
A systematic advanced treatment of areas of current interest in physics; topics will be announced each quarter.
Au, Wk, Sp Qtr. 3 cl. Prereq: 828 or permission of instructor. Repeatable to a maximum of 9 cr hrs in each decennial subdivision.

880.02 Elementary Particle Physics
880.03 Low-Temperature Physics
880.05 Nuclear Physics
880.06 Condensed Matter Physics
880.08 Theory of Quantized Fields
880.20 Special Topics

999 Research in Physics  G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wk, Sp Qtr. This course is graded S/U.

Physiological Optics

A400 Starling Loving, 338 West 10th Avenue, 292-2847

501 Geometrical Optics U P 5
Paraxial optics, primary optical aberrations, thick lens and mirror systems, ray tracing, field and aperture stops, and prisms.
Au Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 1st yr standing or major in phys opt.

502 Physical Optics U P 3
Light sources and spectra; light waves and their interference, diffraction, dispersion, and polarization.
Wk Qtr. 2 cl, 1 2-hr lab. Prereq: 501.

511 Introduction to Physiological Optics I U P 5
The eye as an optical instrument; the refracting mechanism; the mechanism of accommodation and pupillary contraction; blur of the retinal image; stray light in the eye.
Sp Qtr. 4 cl, 1 2-hr lab. Prereq: 501 and 608. Not for grad credit to students majoring in phys opt.

512 Introduction to Physiological Optics II U P 5
The motility of the eye; the structure and innervation of the extracocular muscles; the center of rotation; and analysis and description of eye movements.
Au Qtr. 4 cl, 1 2-hr lab. Prereq: 511. Not for grad credit to students majoring in phys opt.

520 Measurement and Specification of Visual Stimuli U P 5
Light sources; diffusely transmitting and reflecting surfaces; light scatter; principles of photometry and colorimetry; selection and arrangement of light sources.
Au Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing and 511. Not for grad credit to students majoring in phys opt.

531 Basic Human Anatomy U P 5
Basic human developmental, neural, and gross anatomy, using models and films, supplemented with prepared specimens.
Au Qtr. 3 cl, 2 2-hr lab. Prereq: Optometry 1st yr standing or major in phys opt.

535 Microscopic Anatomy U P 5
Microscopic anatomy of cells and tissues, and special histology of the organ systems.
Wk Qtr. 3 cl, 2 2-hr lab. Prereq: Optometry 1st yr standing or major in phys opt.

608 Anatomy of the Eye U P 5
Human gross anatomy of the head and neck with special emphasis on the eye and orbit; histology and embryology of the eye and associated structures.
Sp Qtr. 3 cl, 2 2-hr lab. Prereq: 1st yr Optometry or permission of instructor.

613 Intermediate Physiological Optics I U P 5
Monocular sensory mechanisms of vision; analysis and specification of visual stimuli; photoreception and retinocortical transmission; adaptation of photoreceptors; flicker; brightness discrimination; and color vision.
Wk Qtr. 4 cl, 1 2-hr lab. Prereq: 512.

624 Ocular Form and Function I P 3
An in-depth study of the basic physiologic functions of the eye including related pathophysiologic mechanisms.
Au Qtr. 3 cl. Prereq: Optometry 2nd yr standing or permission of instructor.

625 Ocular Form and Function II P 3
Continuation of 624.
Wk Qtr. 3 cl. Prereq: 624.

693 Individual Studies in Physiological Optics P G 1-15
Properly qualified students may perform minor investigations or add to their knowledge and technique.
Su, Au, Wk, Sp Qtr. Prereq: Permission of dean. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

715 Intermediate Physiological Optics II P G 5
Projection of visual impressions; the horopter, retinal correspondence; binocular integration of hue and brilliance.
Sp Qtr. 4 cl, 1 2-hr lab. Prereq: Optometry 2nd yr standing and 613.

716 Intermediate Physiological Optics IV P G 3
Visual perception of color, illumination, figure-ground relations, size, shape, direction, distance, motion, time, and complex patterns.
Au Qtr. 3 cl, Prereq: 715.

731 Occupational and Environmental Vision P G 4
Visual testing in industry; relation of vision to performance, comfort, and safety; visual requirements for licenses; eye hazards and protection; compensation for vision loss.
Wk, Sp Qtr. 3 cl, 1 2-hr lab. Prereq: 520 or major in phys opt.

732 Vision of Children P G 5
Visual-survey methods; the prevalence of visual anomalies and eye diseases in children; basic visual skills required in school and methods for their improvement.
Au Qtr. 3 cl, 1 4-hr lab. Prereq: Optometry 3rd yr standing or major in phys opt.

733 Optometric Gerontology P G 4
A survey of visual and systemic changes associated with aging, with emphasis on ophthalmic examination and rehabilitative techniques.
Sp Qtr. 3 cl, 2 2-hr lab. Prereq: Optometry 3rd yr standing or major in phys opt.

780 Topics in Physiological Optics P G 1-5
Experimental and theoretical aspects of areas of current interest in physiological optics.
Su, Au, Wk, Sp Qtrs. 3 cl, 1 2-hr lab. Prereq: Optometry 3rd yr standing or major in phys opt. Repeatable to a maximum of 30 cr hrs with not more than 20 cr hrs in any one subdivision.

780.01 Ocular Anatomy
780.02 Ocular Physiology
780.03 Corneal Physiology
780.04 Microbiology of the Eye
780.05 Experimental Design
780.06 Psychophysics of Vision
780.07 Paradigm of Physiological Optics
780.08 Ocular Biometrics
780.09 Visual Optics
780.10 Environmental Vision
780.11 Image Evaluation
780.12 Geometrical Optics
780.13 Physical Optics
780.14 Oculomotor Systems
780.15 Binocular Visual Processes
780.16 Monocular Visual Processes
780.17 Photochemistry of Vision
780.18 Color Vision
780.19 Stimulus Specification
780.20 Neurophysiology of Vision
780.21 Visual Electrometrics
789.22 Physiological Optics

795 Seminar P G 1-5
A series of seminars dealing with new developments in the various phases of physiological optics.
Su, Au, Wi, Sp Qtrs. 1-5 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded S/U.

801 Advanced Physiological Optics I G 5
The ocular image-forming mechanism; accommodation and pupil contraction; aberrations; stray light; retinal phenomena; shape, size, distortion; retinal illumination and blur.
Au Qtr. 3 cl. 2-2 hr lab. Prereq: 716.

802 Advanced Physiological Optics II G 5
Advanced topics on eye movements including coordinate systems for eye movements; fixational eye movements; vergence and fixation; disparity; saccades; pursuits; visual localization.
Wi Qtr. 3 cl. 2-2 hr lab. Prereq: Grad standing in phy opt or permission of instructor.

803 Advanced Physiological Optics III G 5
Binocular integration of hue and brilliance, fusional movements, fixation, retinal correspondence, visual perception of figure-ground relations, light, color, illumination, size, shape, direction, distance, and motion.
Sp Qtr. 3 cl. 2-2 hr lab. Prereq: 802.

808 Advanced Functional Neuroanatomy of the Visual System G 5
Intense study of the neuroanatomy of the visual system.
Sp Qtr. 3 cl. and 2-2 hr lab. Prereq: Enrollment in the College of Optometry or graduate status in phy opt and permission of the dean.

810 Image Evaluation G 5
An analysis of the causes of image impairment in the human eye and other optical systems; objective methods of assessing aberrations and blur; methods of image enhancement.
Au Qtr. 5 cl. Prereq: 502 and 613.

811 Mechanisms Subserving Color Vision G 5
Theoretical basis for chromatic adaptation, chromatic contrast and induction, color blindness, and other color phenomena; theory of the laws of color mixture.
Wi Qtr. 5 cl. Prereq: 613.

812 Advanced Neurophysiology of the Visual System G 5
The coding and transmission of visual information in the direct and accessory pathways of vertebrates and invertebrates.
Sp, Au Qtr. 4 cl. 1-2 hr lab. Prereq: 613, 614, 715, and 716.

813 Advanced Physiology of the Eye G 5
Recent developments in the respiration, metabolism, and mechanics of ocular tissues, and the aqueous dynamics of the eye.
Au Qtr. 4 cl. 1-2 hr lab. Prereq: 613 and 614.

815 Binocular Vision and Perception G 5
Visual perception: direction, space, and motion; perceptual adaptation; binocular vision and fusion.
Wi Qtr. 3 cl. 1-2 hr lab. Prereq: 803.

820 Specification of Visual Stimuli G 5
Study of visual stimuli and apparatus to control parameters such as intensity, spectral composition, retinal location, and pupil size and location; calibration and practical application.
Sp Qtr. 3 cl. 4-hr lab. Prereq: 801 or permission of instructor.

694 Group Studies in Physiological Optics G 1-5
Group studies on special problems in physiological optics.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in phy opt. Repeatable to a maximum of 30 cr hrs.

999 Research in Physiological Optics G Arr
Research for thesis on dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Physiology

302 Hamilton Hall, 1645 Neil Avenue, 292-5448

311 Principles of Human Physiology I U 5
First of a two-quarter sequence covering the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.
Wi Qtr. 4 cl. 1-1 hr lab-disc. Prereq: 2 qtrs chem, Anatomy 199 or 200 or equiv recommended, or permission of instructor.

312 Principles of Human Physiology II U 5
Continuation of 311. Sp Qtr. 5 cl. Prereq: 311 or permission of instructor.

494 Group Studies in Physiology U 1-5
Group studies for students in specialized programs.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 20 cr hrs.

601 Organ System Physiology I U P Q 5
First of a two-quarter sequence presenting the following areas of physiology: neuromuscular, heart and circulation, endocrine, brain and special senses, body fluids and kidney, respiration, digestion, temperature control, and metabolism.
Au Qtr. 5 cl. Prereq: Inorganic and organic chem, Physics 111, 112, 113 or equiv, and 1 yr biological sciences, and permission of instructor for undergrads.

602 Organ System Physiology II U P Q 5
Continuation of 601.
Wi Qtr. 5 cl. Prereq: 601. Normally to be taken directly following 601.

604 Advanced Physiology I P 4
First of a 2-qtr sequence covering these physiological areas: neuromuscular central nervous system and special senses, endocrinology and reproduction, cardiovascular, digestion, respiration, body fluids, and kidney.
Au Qtr. 4 cl. Prereq: Open only to students enrolled in the College of Dentistry or Pharmacy, or permission of instructor.

605 Advanced Physiology II P 4
Continuation of 604.
Wi Qtr. 4 cl. Prereq: 604. Open only to students enrolled in the College of Dentistry or Pharmacy, or permission of instructor.

607 Medical Organ System Physiology I G 4-6
First of a three quarter sequence presenting physiology from an organ system perspective.
Au Qtr. 4-6 cl. Prereq: Inorganic and organic chemistry, Physics 111, 112, 113 or equiv and 1 yr of biological sciences and grad standing in physiol or grad standing in a dept in College of Medicine and permission of instructor. A total of 15 or hrs will be given for the 607-608-609 sequence with a distribution of 4-6 cr hrs each qtr as determined by the instructor.

608 Medical Organ System Physiology II G 4-6
Continuation of 607.
Wi Qtr. 4-6 cl. Prereq: 607. Normally to be taken directly following 607.

609 Medical Organ System Physiology III G 4-6
Continuation of 608.
Sp Qtr. 4-6 cl. Prereq: 608. Normally to be taken directly following 608.

617 Experimental Procedures in Physiology I G 1
First of a three-quarter sequence of experimental physiology with emphasis on experimental demonstration of physiological principles.
Au Qtr. 1-1hr lab and 1 cl every other week. Concur: 601. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

618 Experimental Procedures in Physiology II G 1
Continuation of 617.
Wi Qtr. 1-1 hr lab and 1 cl every other week. Prereq: 601 and 617; concour: 602. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

619 Experimental Procedures in Physiology III G 1
Continuation of 618.
Sp Qtr. 1-1 hr lab and 1 cl every other week. Prereq: 601 and 602 and 617 and 618. Open only to grad students in dept or by permission of instructor. Enrollment limited to 10. This course is graded S/U.

748 Electronic Instrumentation for Physiology U P Q 2
Basic principles of electrical and electronic measurement techniques and transducers: bridge circuits, operational amplifiers, filters, strain gauges, force and temperature transducers, digital data recording; familiarization with multimeter and oscilloscope.
Au Qtr. 1 cl. 1-2 hr lab. Prereq: Grad standing in physiol or permission of instructor. Enrollment limited to 15.

793 Individual Studies in Physiology U P Q 2-18
Reading, conferences, and laboratory work by individual arrangement with qualified students who desire more intensive and specialized study than is available in other courses.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. This course is graded S/U.
Plant Biology 309

801 Seminar in Physiological Research Topics U 1
Formal lectures, seminars, and demonstrations by Physiology graduate faculty and visiting scientists, describing and explaining the pertinence of current physiological research.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad 1st yr standing in physiol or permission of instrmtr. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.

850 Seminar in Physiology G 2
Su, Au, Wi, Sp Qtrs. Repeatable.

911 Advanced Studies in Physiology
Su, Au, Wi, Sp Qtrs. Prereq: 601, 602 or 607, and 608, or equivs with written permission of instructor. Quarter schedule of topics to be announced.
911.06 Temperature Regulation
Bozant
911.15 Gastrointestinal Physiology G 3 or 5
Stephens
911.24 Muscle Contraction G 3
In-depth examination of molecular mechanisms of activation and contraction in muscle.
911.25 Membrane Transport G 3
In depth presentation of the theoretical basis of membrane biophysics and its practical application to cellular excitability. 2 1/2-hr cl. Prereq: 600-level course in physiol and permission of instructor.
911.26 Advanced Topics in Integrative Neurophysiology G 3
In-depth presentation of the theory and concepts of neural networks and microcircuits. 2 1/2-hr cl. Cross-listed in Neuroscience.
911.27 Advanced Cardiovascular Physiology G 3
Advanced presentation of cardiovascular topics, including electrical and mechanical properties of the heart; neural control of the CV system; regulation of vascular smooth muscle, microcirculation. 1 1/2-hr cl. Prereq: 501 and 602, or equiv with permission of instructor. Enrollment limited to 20. Offered every third year.

999 Research in Physiology G Arr
Research for thesis or dissertation purposes only. This course is graded S/U.

Plant Biology

108 Botany and Zoology Building, 1735 Neil Avenue, 292-9852

101 Introduction to Plant Biology I: Plants, People, and the Environment U 5
Plants and their relationships to humans and the biosphere; plant structure and function, growth, and development; practical and economic uses of plants.
Su, Au, Wi, Sp Qtrs. 4 cl, 1 2-hr rec. Not open to students with credit for 112, or Biology 101 or 113. This course is available for EM credit. NS Admins Cond course. GEC bio sci course.

102 Introduction to Plant Biology II: Plants, People, and the Environment U 5
Continuation of 101: plant genetics and biotechnology, diversity and evolution, and the importance of plants for the biosphere and for human survival.
Su, Wi, Sp Qtrs. 3 cl, 1 3-hr lab. Prereq: 101. This course is available for EM credit. NS Admins Cond course. GEC bio sci course.

203 Plant Functions in the Environment U 5
Introduction to physiological ecology, emphasizing photosynthesis as the biological mobilization of solar energy and organic materials for the growth of plants and other organisms. Plant.
Sp Qtrs. 1 1/2-hr cl (Sat). Prereq: 101 or 112 or equiv.

295 Individual Studies U 1-5
Individual work in the field of the chosen problem.
Su, Au, Wi, Sp Qtrs. Prereq: 102 or 112 or Biology 114, and written permission of instructor. Only 5 cr hrs may count towards a plant bio major. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

294 Group Studies U 1-5
Group study of topics in plant biology.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs for different topics only.

300 General Plant Biology U 5
Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity.
Au, Wi, Sp Qtrs. 3 cl, 2 2-hr labs. Prereq: Biology 101 or 113. Not open to students with credit for Hort 201 or 300, or H&CS 300. Cross-listed in Horticulture and Crop Science. GEC bio sci course.

402 Plant Development U 5
Concepts in plant development at the introductory level: from seed to seedling, seedling to the adult, flowering and fruiting, with emphasis on current research. Raghavan.
Wi Qtr. 3 cl, 2 2-hr labs. Prereq: 300 or H&CS 300, or Biology 113 or H115, or permission of instructor. Not open to students with credit for 202. NS Admins Cond course.

436 Introductory Plant Physiology U 5
Topics in plant physiology at the introductory level: diffusion, transpiration, water stress, translocation, enzyme kinetics, photosynthesis, plant growth hormones, tropisms, flowering, fruit development. Cline, Evans, and Yang.
Au, Sp Qtrs. 4 cl. Prereq: 101 or 112 or Biology 114; 10 cr hrs in chemistry, or equiv with written permission of instructor.

604 Research Methods in Plant Science U G 4
2 1/2-hr cl, 2 3-hr labs. Prereq: 300 or 436, or Biology 114 or H&CS 300 or grad standing or permission of instructor. Not open to students with credit for these courses in H&CS or Plant Phy. Cross-listed in Horticulture and Crop Science, and Plant Pathology.

604.01 Whole Plant
Introduction to scientific skills and modern research methods for the study of plants at the whole plant level.
Au Qtr.

604.02 Cell and Tissue Level
Introduction to scientific skills and modern research methods for the study of plants at the cell and tissue level.
Wi Qtr.

604.03 Molecular Level
Introduction to scientific skills and modern research methods for the study of plants at the molecular level.
Sp Qtr.

622 Plant Genetics and Molecular Biology U G 5
An in-depth survey of classical and molecular genetic systems in plants with emphasis on current research topics. Davis and Scholl.
Au Qtr. 5 cl. Prereq: Mol Gen 500 or 501 or 605, and Biochem 511 or permission of instructor. Not open to students with credit for Mol Gen 622 or 622. Cross-listed in Molecular Genetics.

630 Plant Physiology U G 3
Au Qtr. 3 cl. Prereq: 101 or 112 or Biology 114, Chem 242 or 252 or Biochem 511, or written permission of instructor.

631 Plant Physiology U G 3
Wi Qtr. 3 cl. Prereq: 101 or 112 or Biology 114, Chem 252 or Biochem 511, or written permission of instructor.

643* Plant Anatomy U G 5
The structure, function, and development of cells, tissues, and organs of vascular plants. Sack.
Wi Qtr. 2 cl, 3 2-hr labs. Prereq: 101 or 112 or Biology 114, and 10 cr hrs in biological sciences; or permission of instructor.

644† Algae U G 5
A general course covering identification, growth, reproduction, evolution, distribution, and economic importance of the algae. Floyd.
Au Qtr. 2 2-hr cl and 1 2-hr cl. Prereq: 102 or 112 or Biology 114, and 15 additional cr hrs in biological sciences; or written permission of instructor.

648* Plant Cell Biology U G 4
The structure and function of plant cells and their components in the context of eukaryotic cell biology. Sack.
Wi Qtr. 3 cl, 1 recit. Prereq: Some background in plant bio and/or cell biology. Students are encouraged to consult with instructor before enrolling.

693 Individual Studies U G 1-5
Problems may be selected in the fields of paleobotany, taxonomy, morphology, morphogenesis, anatomy, physiology, phylogeny, ecology, genetics, or cytology.
Su, Au, Wi, Sp Qtrs. Prereq: 102 or 112 or Biology 114, and 15 additional cr hrs in biological sciences. Not more than 5 cr hrs may count towards an undergrad major in plant bio. Repeatable to a maximum of 15 cr hrs for undergrad. This course is graded S/U.

994 Group Studies U G 1-5
Group study of special topics in plant biology.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.
Plant Biology

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic

698.02 Foreign

735 Plant Biochemistry I U G 3
The biochemistry of plant cell plastids and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development. Sayre.
Au Qtr. 3 cr. Prereq: Biochem 511 or 614. Not open to students with credit for 631 prior to WI Qtr 1988, or to students with credit for 635 prior to WI Qtr 1995, or to students with credit for Biochem 735. Cross-listed in Biochemistry.

736 Plant Biochemistry II U G 3
The biochemistry of plants with emphasis on the synthesis and structure of cell walls, lipids, secondary compounds, phytohormones and nitrogen fixation. Sayre.
Wi Qtr. 3 cr. Prereq: 735 or Biochem 735. Not open to students with credit for 631 prior to WI Qtr 1988, or to students with credit for 635 prior to WI Qtr 1995, or to students with credit for Biochem 736. Cross-listed in Biochemistry.

741* Reproductive Biology of Flowering Plants U G 3
An advanced course on reproductive processes in flowering plants with emphasis on recent biological, molecular, and genetic approaches. Raghavan.
Wi Qtr. 3 cr. Prereq: 101 or 300 or H&S 300 or Biology 114; and 15 additional cr hrs in biological sciences; or permission of instructor. Not open to students with credit for 641.

783 Honors Research U 3-5
Problems may be selected in the fields of paleobotany, taxonomy, morphology, morphogenesis, anatomy, physiology, ecology.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing, a grade of A in at least half of the plant bio courses and an average of 85 in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for graduation with distinction. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

785 Special Topics in Plant Biology U G 1-3
Lecture/discussion in a seminar format of publications, current research, or research techniques in plant biology.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 25 cr hrs in biological sciences at 500 level or above. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

786 Current Topics in Signal Transduction G 3
Sp Qtr. 2 1 1/2-hr cl. Prereq: Biochem 511 and Mol Gen 500, or equiv; or permission of instructor.

803 Seminar in Developmental and Regulatory Plant Biology G 1-3
Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

810* Experimental Taxonomy G 5
Biological systematics, population analysis of mass collections, individual variations, hybridization, and introgression in relation to the methods and materials of experimental taxonomic research.
Au Qtr. 3 of 2, 2-hr labs, several Sat field trips. Prereq: Permission of instructor.

812* Plant Chemosystematics G 5
Examination of the use of chemical data in studying plant relationships and evolution; independent research. Crawford.
Au Qtr. 3 cr, 2-2-hr labs. Prereq: Introductory course in organic chemistry or biochemistry, and 30 or more hrs in biological sciences.

833* Advanced Plant Physiology: Growth G 3
The physiology of growth; special attention given to the interrelated effects of plant hormones and environmental factors on the growth process in plants. Evans.
Sp Qtr. 3 cr. Prereq: Biochem 511, and 10 additional cr hrs in biological sciences; or permission of instructor.

835* Advanced Plant Physiology: Plant Reproduction and Development G 3
Physiology of flowering, fruit and seed development, vegetative reproduction, dormancy, apical dominance, etiology, and senescence. Cline.
Sp Qtr. 3 cr. Prereq: 631 or equiv and Biochem 611.

836* Mechanisms of Plant Development G 3
Discussion of current research topics on the mechanisms of plant development, including such topics as genetic control and the role of biochemical and environmental signals. Grotewold and Yang.
Sp Qtr. 2 1 1/2-hr cl. Prereq: 436 or 622 or 631 and Mol Gen 500 or 622, or permission of instructor.

890 Interdepartmental Seminar in Molecular, Cellular, and Developmental Biology G 2
Students will present oral reports and lead discussion on research progress in specific areas of molecular, cellular, and developmental biology.
Au, Wi, Sp Qtrs. 1.2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U. Given cooperatively by Microbiology, Molecular Genetics, and Plant Biology.

892 Interdepartmental Seminar in Plant Physiology G 1
Students will present seminars on their research or related topics in plant physiology and/or attend seminars by local and visiting researchers.
Au, Wi, Sp Qtrs. 1 cr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U. Greatly depends on Microbiology, Molecular Genetics, and Plant Biology.

998 Research in Plant Biology: Thesis G Arr
Research for master's thesis only.
Su, Au, Wi, Sp Qtrs. Arr. This course is graded S/U.

999 Research in Plant Biology G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Arr. This course is graded S/U.

Plant Pathology

201 Social Impact of Plant Diseases in Shaping Human Society U 2
Review of the interactions of plant pathogens and the social, economic, and historic consequences for civilization. Curtis.
Sp Qtr. 1.2-hr cl.

294 Group Studies U 1-5
Special group studies of a selected area in plant pathology not provided in other courses.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 hrs.

300 Field and Woodland Fungi U 3
An introduction to common macrofungi in natural habitats with emphasis on identification and ecology. Rhodes.
Au Qtr. 2.2-hr lab. Prereq: Biology 101 or 113 or Plnt Bio 101.

401 General Plant Pathology U 5
An introduction to diseases of plants. Biochem.
Au Qtr. 3 cr, 2.2-hr lab. Prereq: Biology 101 or 113, Biology 114 recommended.

489 Internship Experiences in Plant Health Management U 1-5
Ten or more weeks of an individualized experiential learning opportunity designed to link theoretical classroom knowledge with practical field application.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 401. Open to plant health management majors and plant pathology minors. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

501 Diseases of Ornamentals U G 3
Biological and integrated control of important diseases of ornamental plants. Nameth.
Sp Qtr. 2 2-hr cl. Not open to students with credit for 610.

510 Forest Pathology U G 3
Major types of forest tree diseases with emphasis on diagnosis, etiology, epidemiology, and control. Rhodes.
Sp Qtr. 2 cr, 1.2-hr lab. Prereq: Botany 112 or Plnt Bio 101.
505 Plant Responses to Environmental and Biotic Stresses U G 3
A modern treatment of the physiological reactions of plants to stressful
conditions including: drought, salinity, temperature extremes, toxicities
and infections by bacteria, fungi and viruses. Garraway.
Sp Qtr. 3 cl. Prereq: Sr or grad standing and one course in plant or animal
biology.

597 Societal Issues: Pesticides, Alternatives, and the
Environment U G 5
Consideration of the political, ethical, and economic issues related to
pesticide usage, atmospheric pollution, and release of genetically
engineered organisms. Curtis.
Au, Wi, Sp Qtr. 2-2 hr cl. 1-1 hr cl. Prereq: Sr standing. GE/CLR course.

600 Introduction to Bacterial and Viral Pathogens of
Plants U G 5
Introduction to bacterial and viral pathogens and the diseases they
cause in plants. Garraway.
Au Qtr. 3 cl, 2-2 hr labs. Prereq: 401 or Microbiol 521 or permission of
instructor.

601† Fungal Pathogens of Plants U G 5
An in-depth study of the nature of plant pathogenic fungi and the diseases
they cause.
Wi Qtr. 3 cl. 2-2 hr lab. Prereq: 401.

603 Plant Disease Management U G 5
Theory and practice of plant disease management; emphasis on integration
of cultural, biological, chemical, and plant breeding techniques. Riedel.
Sp Qtr. 3-2 hr cl. Prereq: 401; and sr standing in agronomy, hort, plant 11th
ngt, or entomol; or permission of instructor. GE/C course.

604 Research Methods in Plant Science U G 4
2-2/hr cl, 2-2 hr labs. Prereq: H&CSC 300 or Biology 114 or Pint Bio 300 or
436 or grad standing or permission of instructor. Not open to students with
credit for these courses in H&CSC or Pint Bio. Cross-listed in Horticulture
and Crop Science, Plant Biology.

604.01 Whole Plant
Introduction to scientific skills and modern research methods for the
study of plants at the whole plant level.
Au Qtr.

604.02 Cell and Tissue Level
Introduction to scientific skills and modern research methods for the
study of plants at the cell and tissue level.
Wi Qtr.

604.03 Molecular Level
Introduction to scientific skills and modern research methods for the
study of plants at the molecular level.
Sp Qtr.

612 Turfgrass Diseases U G 3
A detailed study of the diseases of turfgrass, factors influencing disease
severity, specific measures for disease control. Boehm.
Wi, Qtr. 2-2 hr cl. Prereq: 401.

613 Integrated Management of Turfgrass Insects, Diseases,
and Weeds U G 4
Identifying the most appropriate genetic, cultural, biological, and chemical
programs for reducing pest damage. Boehm.
Au Qtr. 3 cl, 1-2 hr lab. Prereq: Agronomy 413 and 422; Pint Pth 401.
Not open to students with credit for Agronomy 613.

615 Economic Plant Pathology U G 3
Major diseases of field, fruit, and vegetable crops with emphasis on
etiology, epidemiology, and control.

615.01* Fruit and Vegetable Crop Diseases
Ellis and Riedel.
Wi Qtr. 2-2 hr cl. Prereq: 401 or equiv. Not open to students with credit
for 671, 672, or 673.

636† Plant Nematology U G 3
Bionomics and control of plant-parasitic nematodes. Riedel.
Wi Qtr. 3 cl. Several field trips. Prereq: 401.

660 Mycology U G 5
An introduction to the study of fungi. Rhodes.
Wi Qtr. 2-2 hr labclab, 2 hrs lab work arr. Prereq: 300 or 401 or 601 or
Biology 114 or permission of instructor. Not open to students with credit
for Botany 660.

663 Honors Projects U 1-10
Conducting and reporting the honors project.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Agr: H590.01, enrollment in honors
program, and permission of honors project supervisor. Repeatable to a
maximum of 10 or hrs as H663 or in combination with 593, 593, H593,
H599, 693, or H693. This course is graded S/U.

585 Field Plant Pathology U G 2
Study of plant diseases in the field with emphasis on diagnosis and
epidemiology; supplementary laboratory work. Miller.
Su Qtr. 1 4-hr cl arr. Prereq: 401 or 515, and permission of instructor.

693 Individual Studies U G 1-5
Problems may be selected in the various areas of plant pathology.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative gpr ratio and written
permission of instructor. Repeatable to a maximum of 10 or hrs. This course
is graded S/U.

694 Group Studies U G 2, 3, or 5
Special group studies of a selected area in plant pathology not provided in
other courses.
Su, Au, Wi, Sp Qtrs. Prereq: Sr or grad standing. Repeatable to a maximum
of 10 or hrs.

702* Plant Disease Epidemiology U G 4
Study of the dynamics of plant diseases; statistical modeling of plant
disease epidemics. Madden
Sp Qtr. 2 2-hr cl. Prereq: 401, Stat 528, or permission of instructor.

7301† Fungal Parasitism of Plants U G 4
Survey of physiological and biochemical processes associated with
penetration and parasitism of host plants by fungi; mechanisms of regulation
of disease susceptibility and resistance. Garraway.
Au Qtr. 2 2-hr cl. Prereq: Biochem 511 or permission of instructor. Not
open to students with credit for 530.

832* Plant-Bacteria Interactions G 5
Bacterial pathogens and symbions affecting plant health and productivity;
molecular, cellular, and environmental determinants of plant-microbe
interactions and successful biological control. Bauer and Coplin.
Sp Qtr. 3-2 hr cl. Prereq: 600 or Microbiol 520, Mol Gen 501 or Microbiol 581,
and Biochem 511; or permission of instructor. Not open to students with
credit for Horticulture & Crop Science 832. Cross-listed in Horticulture &
Crop Science.

838* Plant Virology G 3
Plant virus detection, identification, structure, purification, serology,
replication, transmission, vector relationships, variability, nomenclature
and classification, and virus disease symptoms, physiological effects,
epidemiology, economic importance, and control. Gordon.
Sp Qtr. 3 1-hr cl. Prereq: 600 or equiv., or permission of instructor.

839* Plant Virology Laboratory G 2
Experimental approach to plant virus detection and identification; structure,
purification serology, replication, transmission, vector relationships,
variability, nomenclature and classification, virus disease symptoms,
physiological effects, and epidemiology. Gord. 
Wi Qtr. 2 2-hr cl. Prereq: Biochem 511 or Microbiol 509 or permission of
instructor.

842* Biochemistry of Plant Responses to Infection G 3
Introduction to the molecular and genetic basis of plant responses to
microbial infection and symbiosis. Graham.
Wi Qtr. 2 2-hr cl. Prereq: Biochem 511 and 521 or equivs, one 600-level
course in plant physiology or plant biochemistry; or written permission of
instructor. Biochem 631 or Pint Bio 630 or 631 recommended.

861† Physiology of Fungi G 4
Physiology and nutrition of fungi in relation to growth, reproduction, and
metabolism production. Garraway.
Wi Qtr. 2 2-hr cl. Prereq: Biochem 511 or Microbiol 509 or permission of
instructor.

995 Seminar G 1
Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable.

999 Research G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Polish

311

232 Cunz Hall, 1841 Millikin Road. 292-6733
See also Slavic Languages and Literatures.

101 Elementary Polish I
Introduction to Polish; development of listening, reading, speaking, and
writing skills.
Not open to students with credit for 101, or to native speakers of this
tongue. Not open to students with credit for any other course.

Polish
102 Elementary Polish II
Continued study of Polish; development of listening, reading, speaking, and writing skills.
Not open to students with credit for 101; or native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL. Admis Cond courses.

102.01 Classroom Track U 5
5 cl. Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students must register for and complete 5 cr hrs during the qr.

102.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 101.04 or 5 cr hrs of 101.51 or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qr. Progress is sequential from one cr hr to the next with proficiency at the level of 60% required for advancement.

103 Intermediate Polish I
Continued study of Polish; development of listening, reading, speaking, and writing skills.
Not open to students with credit for 101; or native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students who complete 5 cr hrs before the end of the qr may proceed to 103.51. Progress is sequential from one cr hr to the next with proficiency at the level of 60% required for advancement.

104 Intermediate Polish II
Readings, oral and written practice, and grammar review.
Not open to students with credit for 104; or native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

104.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 102.01 or 5 cr hrs of 102.51 or permission of instructor. Students may register for 103.51 and 104.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement.

111* Intensive Intermediate Polish U 5 or 10
An intensive course that combines the content of 103 and 104; balanced use of the four basic skills: reading, oral comprehension, speaking, and writing.
Sp Qtr. 5-2 hr cl. Prereq: 102. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 102 or 112 may not register for more than 5 cr hrs, but must complete the entire course. Course intended for students who wish to expedite the completion of the language requirement. GEC for lang course.

405* Polish Conversation and Composition
Reading texts of moderate difficulty, conversation, and simple compositions. Not open to students with credit for 605; or to native speakers of this language through regular course enrollment or EM credit.

405.51 Individualized Track U 1-5
Prereq: Grade of B- or above in 104 or 104.01 or 5 cr hrs in 104.51 or permission of instructor. Not open to students with credit for 605. Students may register for 104.51 and 405.51 concurrently with the permission of the instructor. Students register for and complete from 1 to 5 cr hrs during the qr. Progress is sequential from one credit hr to the next with proficiency at the level of 60% required for advancement.

407* Polish Conversation and Composition
Reading from modern Polish literature, practice in writing and speaking. Not open to students with credit for 606; or to native speakers of this language through regular course enrollment or EM credit.

407.01 Classroom Track U 5
5 cl. Prereq: 504.01 or 605 or 5 cr hrs in 405.51 or permission of instructor.

407.51 Individualized Track U 1-5
Prereq: B- or above in 605 or 405.01 or 5 cr hrs in 405.51 or permission of instructor. Not open to students with credit for 606. Students may register for 405.51 and 407.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qr. Progress is sequential from one credit hr to the next with proficiency at the level of 60% required for advancement.

580* Reading Polish I
Readings in contemporary sources; development of reading skills with some attention to grammar, sentence structure, and listening comprehension.
Su, Au, Wi, Sp Qtrs. Prereq: 407.01 or 5 cr hrs in 407.51 or permission of instructor.

581† Reading Polish II
581.51 Individualized Track U G 1-5
Continuation of 580.51; development of reading skills with emphasis on word formation and sentence and discourse structure; readings on different facets of Polish life.
Arr. Prereq: 5 cr hrs of 580.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qr. Progress is sequential from one cr hr to the next with proficiency at the level of 60% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

582 Reading Polish III
582.51 Individualized Track U G 1-5
Continuation of 581.51; further development of reading skills; readings on different facets of Polish life.
Arr. Prereq: 5 cr hrs of 581.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qr. Progress is sequential from one cr hr to the next with proficiency at the level of 80% required for advancement. Students may register for 581.51 and 582.51 concurrently with permission of instructor.

630* Polish Drama U G 5
Modern Polish drama from neo-romantic to the absurd and grotesque.
4 cl. Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

631† Polish Prose Fiction U G 5
Modern Polish fiction as related to sociopolitical problems.
4 cl. Prereq: 10 cr hrs in literature courses at the 200 level or above, or permission of instructor. Given in English, but students majoring in Slavic will do portions of the readings in the original.

Political Science
2140 Derby Hall, 154 North Oval Mall, 292-2860

100 Introduction to Comparative Politics U 5
Introduction to major types of political systems found in the world today; examination of similarities and differences among Western democratic, communist, and Third World political systems.
Au, Wi, Sp Qtrs. GEC soc sci organizations and politics course.
101 Introduction to American Politics U 5
Introduction to American politics, the institutions and processes which create public policy, the strengths and weaknesses of the American political systems.
Su, Au, Wi, Sp Qtrs. 5 cl. H101 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 200. GEC soc sci organizations and politics course. SS Admis Cond course.

145 The Politics of Global Problems U 5
The politics of scarcity and security; concepts including power, national interest, cooperation, and expansion applied to global relations in energy, food, technology, and war.
Su, Au, Wi, Sp Qtrs. H145 (honors) may be available to students enrolled in an honors program or by permission of instructor. Not open to students with credit for 105. GEC soc sci human, natural, and economic resources course.

165 Introduction to Politics U 5
Introduction to politics: political issues, political power, democracy, authoritarianism and totalitarianism, basic political institutions, political ideas, and global politics.
Su, Au, Wi, Sp Qtrs. 5 cl. H165 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC soc sci organizations and politics course. SS Admis Cond course.

201 Introduction to Political Behavior U 5
Focus on concepts such as attitude, role, and group and their application in such areas as voting behavior and political participation.
5 cl. H201 (honors) may be available to students enrolled in an honors program or by permission of instructor. GEC soc sci individuals and groups course. SS Admis Cond course.

202 Politics in Contemporary Societies U 5
The politics of contemporary nations, including such topics as political change, party systems, issues in post-industrial societies, political violence, conflict resolution, and policy making.
5 cl. SS Admis Cond course.

210 Modern Political Ideologies U 5
Introductory survey of modern political ideologies: capitalism, socialism, communism, anarchism, fascism: consideration of both the justifications of ideologies and their implications for political life.
5 cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC soc sci organizations and politics course. SS Admis Cond course.

245 The United States in World Politics U 5
The role of the United States in world politics since the Second World War, emphasizing structural change in economic and political-military relations.
Su, Au, Wi, Sp Qtrs. Not open to students with credit for 215. GEC soc sci organizations and politics course. SS Admis Cond course.

294 Group Studies U 1-5
Su, Au, Wi, Sp Qtrs. 5 cl. Repeatable to a maximum of 10 cr hrs.

300 American Politics and Policy Making U 5
An examination of American political institutions and the policy-making process.
5 cl. Not open to students with credit for 101.

305 Introduction to Public Policy U 5
Introduction to the workings of policy-making processes within governments, and the use of social science reasoning to evaluate and improve the content of policies.
5 cl.

345 Interpreting International Politics U 5
An examination of the nature and determinants of major phenomena in international politics such as crises, alliances, integration, interdependence, subversion, war and conflict resolution processes.
5 cl.

367 Second Writing Course U 5
GEC second writing course.

367.01 Contemporary Issues in American Politics U 5
Discussion of and critical writing about controversies in contemporary American politics; aimed at fostering analytical abilities in reading comprehension, oral, and written expression.
Au Qtr. 2 2-hr or 5 cl. H367.01 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 101 or 300 or permission of instructor, English 110 or 111, and soph standing.

501 The American Presidency U 5
An examination of the American presidency, emphasizing the contemporary role of the president, the institutionalized presidency, and theories of presidential behavior.
5 cl.

502 Campaign Politics U 5
The organization and strategy of American political campaigns; practical politics seen in the light of knowledge about political behavior and public opinion.
5 cl.

504 Black Politics U 5
Economic, political, and social constraints on the development of black political power; the efforts made by black people in recent times to organize for effective political action.

505 Urban Government U 5
Introduction to the governance of urban communities in the United States.
5 cl.

5061 Ohio Politics U 5
Examination of state politics with special reference to Ohio.
5 cl.

507 American State Politics U 5
Comparative analysis of politics in the American states.
5 cl. Prereq: 101 or 300 or permission of instructor. Not open to students with credit for 504.

512 Women and Politics U 5
An examination of women's participation in political activity, including changes over time in women's political roles and comparison with the roles of men.
5 cl.

514 Women and the Law U 5
An examination of the legal status of women and the ways in which law affects the situation of women in American society.
5 cl.

515 The Politics of Legal Decision Making U 5
An examination of the literature relating social-scientific theories and research to the law, focusing on the criminal justice system.
Sp Qtr. 2 2-hr cl.

516 Judicial Politics U 5
Analysis of the roles of judges and lawyers as participants in the American political process; analysis of courts as political institutions.
5 cl.

517 Legislative Politics U 5
Analysis of legislatures and legislators, with a focus on the U.S. Congress and some attention to state legislatures and representative assemblies in other countries.
Au, Wi Qtrs. 5 cl. Prereq: 101 or 300 or permission of instructor. Not open to students with credit for 517.

518 Civil Liberties in the Courts U 5
An examination of civil liberties decisions by American courts, their legal and political bases, and their effects on government and society.
5 cl.

520 The American Constitution and Governmental Powers U 5
Assessment of the contemporary realities of U.S. governmental authority as interpreted by the judiciary; emphasis on judicial review, case and controversy requirements, and legislative and executive power.
5 cl. Not open to students with credit for 694 S 5 Qtr 1979 or Sp Qtr 1980.

530 Politics of Post-Communist Societies in Eastern Europe U 5
Systematic comparison of the sources, dynamics, and outcomes of political, economic, and social transformations in the former Communist countries of Eastern Europe.
5 cl.

533 Soviet and Post-Soviet Politics U 5
Survey of the politics of the successor states of the USSR with the emphasis on democratization, economic reform, institutional development, elites, mass behavior and ideology.
3 1/2-hr cl. Not open to students with credit for 630.

535 Government and Politics of the Industrialized World U 5
Analyzes of politics of the United States, Western Europe, and Japan regarding contemporary problems of inequality, regime instability and conflict, value change and the environment.
5 cl.
537 Government and Politics of China U G 5
A study of the contemporary political process of Communist China; considerable time will be spent on an analysis of recent political change in China and the process of revolution.
5 cl. Not open to students with credit for 637.

540t Latin American Government and Politics U G 5
A study of political processes, institutions, and groups in Latin America, with emphasis on political systems, political behaviors, and economic environments in which they operate.
5 cl. Not open to students with credit for 640.

541 Politics of the Developing World U G 5
A general introduction to the theoretical and substantive literature dealing with the historical development and contemporary characteristics of the new states of Asia and Africa.
5 cl.

543 Foreign Policy Decision Making U G 5
Examination of how political leaders make decisions, emphasizing such issues as leaders' reasoning processes and the impact of public opinion and foreign policy bureaucracies.
Au Qtr. 2-2 hr. Prereq: 245 or permission of instructor.

546 Politics in the Middle East U G 5
Politics of Arab-Israel relations, Persian Gulf, Islamic fundamentalism, and oil; processes of change and their effects on governments and international relations.
Wi Qtr. 2-2 hr.

550 Theories of International Relations U G 5
Various theories of world politics, such as realism, liberalism, long cycles, domestic and bureaucratic politics, and decision-making level theory.
Sp Qtrs. 2-2 hr.

551 The United Nations System in Global Problem Solving U G 5
Activities and potential of the United Nations system in promoting economic well-being, environmental management, resource sharing, social justice, and control of violence.
5 cl.

553 Political Analysis of International Economic Relations U G 5
Examines the relationship between political and economic events in the international system; topics include global interdependence, inequality, scarce resources, and periphery nations strategies.
5 cl. Not open to students with credit for 653 or 753.

555 Soviet and Post-Soviet Foreign Policy U G 5
Basic concepts about, and choices in Soviet and post-Soviet foreign policy; development and presentation of patterns of relations with key nations; major problems in future relationships.
2-2 hr. Not open to students with credit for 655.

560 Regional Patterns in International Politics U G 5
Examination of ideological, institutional, and foreign political patterns in particularized regions, such as sub-Saharan Africa, Arab Middle East, Southeast Asia.
5 cl. Repeatable to a maximum of 15 cr hrs.

571 Political Theories of Democracy U G 5
An examination of theories of democracy, focusing on normative and descriptive dilemmas such as participation versus liberty in democratic societies.
5 cl.

573 American Political Ideas U G 5
An analysis of American ideas on law and government, authority and liberty, oligarchy and democracy.
5 cl.

580 State and Economy U G 5
Introduction to comparative political economy; relations between the state and the economy, politics and markets, and democracy and capitalism; the consequences of state intervention.
Wi Qtr. 2-2 hr.

585 Techniques of Political Analysis U 5
Introduction to research design, nature of data, its generation and analysis; analysis of political variables.
5 cl. HS68 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: One course in political science at the 300 level or above. Prereq for HS85: One course in political science at the 300 level or above, and Math 150. GEC data analysis courses.

589 Student Internship in Politics and Public Policy U G 1-15
Combines experience in political institutions or policy processes with analysis of that experience in light of relevant scholarly literature.
Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs; including 1 hr in 689.

590 Topical Issues in Political Science U G 3-5
Selected issues and topics in American, international, or comparative politics, political theory or public policy; topics vary by section and instructor.
Repeatable to a maximum of 10 cr hrs.

593 Individual Studies U G 1-15
Students will devote their time to special projects including papers, exams, and practical political experience.
Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

HS56 Honors Seminar in Political Science U 3-5
Intensive study of selected political science topics and issues in seminar format; topics vary.
Prereq: Enrollment in an honors program or permission of instructor. Repeatable to a maximum of 10 cr hrs.

597 Issues of the Contemporary World U 5
Prereq: Sr standing. GEC contemporary world courses.
597.01 Interdependence and Nationalism in World Politics
An examination of the relationships industrialized countries have with each other and nations in the Third World; focus on the potential for cooperation and conflict.
Sp Qtr. 3-1-1/2 hr cl or 2-2 hr cl or 5 cl. HS57.01 (honors) may be available to students enrolled in an honors program or by permission of instructor. Not open to students with credit for 350.

597.02 Political Problems of the Contemporary World
Critical political problems of industrialized and Third World societies, including governmental legitimacy, conflict and violence, social welfare, equality, and economic development.
Au, Wi, Sp Qtrs. 5 cl. HS57.02 (honors) may be available to students enrolled in an honors program or by permission of instructor. Not open to students with credit for 325.

597.03 Interdisciplinary Perspectives on Current Issues
Team-taught interdisciplinary and cross-cultural course on the relations among politics, ethics, rhetoric, and law as they confront current practical issues.
Sp Qtr. 2-2 hr cl. Not open to students with credit for English HS57.03 or Philosophy HS57.03. Cross-listed in English and Philosophy.

General Prerequisites for Courses Numbered 600
Unless otherwise indicated, the prerequisites for 600-level courses are two courses in political science, or the consent of the instructor.

603 Public Opinion U G 5
Origins and nature of political attitudes; the content of public opinion; the public's influence on policy-making.
Wi Qtr. 5 cl.

605r Survey Research in Political Science U G 5
The conducting of public opinion polls; participation in a public opinion survey.
2-2 hr cl.

606r Ethnic Politics in the American Cities U G 5
Group conflict among ethnic groups in major American cities: factors contributing to group cohesion in politics; strategies and resources for exercising power through collective political action.
5 cl.

609 The Mass Media and American Politics U G 5
An overview of the influence of the mass media on contemporary American politics: primary focus on news media with consideration of entertainment programming.
Au Qtr. 2-2 hr cl.

610r Executive and Bureaucratic Politics U G 5
Introduction to the roles and behavior of executives and bureaucrats in the formulation and implementation of public policy in the United States.
5 cl.

612 Political Leadership U G 5
Establishment of a working definition of political leadership, investigation of recruitment of leaders, analysis of major functions political leaders perform, and assessment of consequences of political leadership.
Sp Qtr. 2-2 hr cl. Prereq: 100 or 101 or 300 or permission of instructor. Not open to students with credit for 510.
614 Urban Politics U G 5
The study of political problems facing the cities: including community
power, poverty, welfare, urban renewal, urban education, law enforcement,
and violence.
5 cl.

627 Government and Politics of Western Europe U G 5
Systematic comparison of political phenomena and governmental
institutions within West European societies.
5 cl. Prereq: Permission of instructor for second 5 cr hrs. Repeatable to
a maximum of 10 cr hrs.

628 Political Integration in Western Europe U G 5
A study of the European Union including pooled sovereignty models of
international cooperation, and political integration.
Wi Qtr. 2-2 hr cl.

629 Analysis of 20th-Century Problems in Cross-National
Perspective U G 5
Studies of contemporary political phenomena from a comparative
perspective, including instability-stability in parliamentary systems,
revolution, urban and local politics, national integration, and other topics.
Repeatable to a maximum of 15 or cr hrs.

635 Government and Politics of Japan U G 5
The government and politics of Japan, with special emphasis being given to
the impact of cultural and social processes on the patterns of government with
imported political institutions.
5 cl.

636 Southeast Asia U G 5
Governments and politics of the Philippines, Indonesia, Indo-China,
Malaysia, Thailand, and Burma; contemporary problems of this region in
relation to world politics.
5 cl.

653 Politics of the Modern World Economy U G 5
Institutions and processes which define the contemporary global economy;
their political origins and consequences as interpreted by competing
schohs of thought in political economy.
Wi Qtr. 5 cl. Not recommended to students with credit for 553. Not open to
students with credit for 753.

670 Political Theory: Socrates to Machiavelli U G 5
The study of major works by political theorists, including Plato,
Aristotle, Cicero, Augustine, Aquinas, Machiavelli, and others, in ancient
and medieval times.
5 cl.

671 Political Theory: Machiavelli to Hume U G 5
The study of major works by political theorists, including Machiavelli,
Hobbes, Locke, Rousseau, Hume, and others, from the Renaissance into
the 18th century.
5 cl.

672 Political Theory: Hume to Marx U G 5
The study of major works by political theorists, including Hume,
Berthoud, Kant, Hegel, Mill, Marx, and others, before and after the French
Revolution.
5 cl.

673 Political Theory: 20th Century U G 5
The study of major works by political theorists in the 20th century.
Su Qtr. 5 cl.

674 Political Participation and Voting Behavior U G 5
A study of political participation and its correlates, determinants of the vote
decision, and analysis of recent American elections.
5 cl.

675 American Political Parties U G 5
Theories of political parties, party organization, individual voting behavior,
nomination and electoral politics, the party in government.
5 cl.

678 Political Decision-Making and Public Policy U G 5
Comparative analysis of decision-making processes of contemporary
countries considering the welfare, education, economic, and environmental
policy arenas.
3 cl, 1 lab. Not open to students with credit for 578.

679 Policy Analysis U G 5
An analysis of the policy process emphasizing the determinants of public
policy, theories of public choice, and the implementation, impact, and
evaluation of policy decisions.
5 cl.

680 Models of Politics U G 5
An introduction of major approaches used in modelling politics, including
social choice, game theory, and probability models.
Au Qtr. 5 cl.

684 Introduction to Political Science Research
Methods U G 5
Introduction to political science research with emphasis on survey and
experimental designs, data generation techniques, data processing, and
computer utilization.
2 2-2 hr cl. Prereq: Grad standing in polit sc or permission of instructor.

685 Methods of Quantitative Analysis: Elementary U G 5
Exploration, interpretation, and application of techniques for quantitative
analysis of political data; descriptive and inferential statistics, with emphasis
on bivariate analysis.
5 cl. Prereq: Grad standing in polit sc or permission of instructor.

686 Methods of Quantitative Analysis: Intermediate U G 5
Descriptive and inferential statistics with emphasis on multivariate analysis;
additional topics offered as desired and possible: scaling, index construction,
sampling, measurement reliability.
5 cl. Prereq: 685 and grad standing in polit sc, or permission of instructor.

694 Contemporary Political Problems U G 3-5
Prereq: Sr standing and 15 or cr hrs in polit sc. Repeatable to a maximum of
30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institute and receive
Ohio State credit for that work.
Repeatable to a maximum of 45 or cr hrs. Students will pay Ohio State fees
and any fees in excess of Ohio State tuition, as well as all travel and
subsistence costs.

Enrollment in 700-level courses is limited to graduate students or
others with written permission of the instructor only.

700 Basic Theories in the Study of American Politics U G 5
Examination of basic concepts and approaches; consideration of
methodological and substantive problems encountered at various levels of
analysis.
2 2-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to
a maximum of 10 or cr hrs.

701 Seminar on the American Presidency U G 5
Examination of presidential research and analysis of literature on selected
aspects of the presidency.
2 2-2 hr cl. Prereq: 501 or grad standing or permission of instructor. Not open
to students with credit for 601.

703* Readings in Public Opinion U G 5
Intensive analysis of literature on selected topics in public opinion.
2 2-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to
a maximum of 10 or cr hrs.

704 Readings in State and Local Politics U G 5
Intensive review of selected aspects of the literature on state and local
politics in the United States.
2 2-2 hr cl. Prereq: 604 or 614 or equiv; and grad standing or permission of
instructor. Repeatable to a maximum of 10 or cr hrs.

709 Seminar in American Politics U G 5
Introduction to the central research areas and literature of the field of
American politics.
Wi Qtr. 5 cl. Prereq: Grad standing in polit sc or permission of instructor.
Not open to students with credit for this topic under 894.

711* Organized Interest Groups G 5
Roles and impact of interest groups in American politics, including formation,
recruitment, and maintenance of organizations; grassroots mobilization;
and lobbying in legislatures, courts, and bureaucracies.
Wi Qtr. 2 2-2 hr cl. Prereq: Grad standing.

715 Judicial Politics: Process and Policy Making U G 5
Examination of the judicial process with emphasis on the work of trial
courts and the rules of courts as policy makers.
2 2-2 hr cl. Prereq: Grad standing or permission of instructor.

716* Judicial Politics: Decision Making U G 5
Examination of decision making in appellate courts.
2 2-2 hr cl. Prereq: Grad standing or permission of instructor.
717 Readings in Legislative Politics and Policy-Making U G 5
A theoretical-empirical analysis of the functioning and policy product of American legislatures; intensive review of selected aspects of the legislative literature to be conducted.
2-2 hr cl, Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 or hrs.

725 Basic Theories in the Study of Comparative Politics U G 5
Examination of such concepts and theories as structural-functional analysis; general systems theory; and sociological systems as determinants of governmental structures.
3 cl, Prereq: Grad standing or permission of instructor.

726 Methods and Approaches in Comparative Politics G 5
Overview of the various approaches, methods, and data used in comparative politics; discussion of the strengths and shortcomings of each approach.
2-2 hr cl, Prereq: Grad standing or permission of instructor.

727 Problems in Western European Politics U G 5
Intensive study of selected problems.
1 2-2 hr cl, Prereq: 627 and grad standing or permission of instructor. Repeatable to a maximum of 10 or hrs.

730 Seminar in Soviet and Post-Soviet Politics G 5
Introductory to the literature on Soviet politics; examination of theoretical and empirical analyses of socio-economic and political transformation in the Soviet successor states.
Wi Qtr: 2-2 hr cl.

731 Problems in Post-Soviet Politics G 5
An intensive examination of selected problems such as elite conflict, party formation, institutionalization, nationalism, and interstate relations within the CIS.
1 3-3 hr cl, Prereq: 630 or 655; and grad standing or permission of instructor.

734 Readings on Chinese Politics U G 5
A seminar for the purpose of reading advanced scholarly materials on contemporary Chinese politics.
1 3-3 hr cl, Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 or hrs.

735 Comparative Political Economy G 5
A graduate-level course designed to survey contemporary theories on the interaction between economic policies, domestic institutions, the international economy, and their consequences on the macroeconomy.
Wi Qtr: 1 3-3 hr cl, Prereq: Grad standing or permission of instructor. Not open to students with 10 or hrs of Econ 735. Repeatable to a maximum of 10 or hrs, with permission of instructor. Cross-listed in Economics.

740 Problems in Latin American Politics U G 5
An advanced seminar devoted to a structured examination of the major theories, concepts, and approaches used in the analysis of Latin American politics.
1 3-3 hr cl, Prereq: 562 or 640; and grad standing or permission of instructor.

741 Politics of the Developing World U G 5
Theories, approaches, and methods in the analysis of political life in Asia, Africa, and Latin America; discussion of selected case and cross-national studies with theoretical importance.
2-2 hr cl, Prereq: Grad standing or permission of instructor.

742 Political Issues in Economic Development G 5
Political factors that have affected the economic development of the western world and the developing areas.
Au Qtr: 1 3-3 hr cl, Prereq: Grad standing in the social and behavioral sciences or permission of instructor.

743 Peasant Politics U G 5
Intensive study of selected aspects of peasant political behavior, with particular attention to non-institutionalized political participation and collective action.
Au Qtr: 1 3-3 hr cl, Prereq: Grad standing or permission of instructor.

744 Democratic Transitions U G 5
Theoretical examination of the dynamics of the transition from authoritarian to democratic regimes, with special attention to Southern Europe and South America.
Au Qtr: 1 3-3 hr cl, Prereq: Grad standing or permission of instructor.

745 Basic Theories in the Study of International Politics U G 5
Examination of such basic concepts and theories as equilibrium models, balance of power, national interest, geopolitical configurations.
2 3-3 hr cl, Prereq: Grad standing or permission of instructor.

746 Synthesizing International Politics Scholarship U G 5
Synthesis of international politics research and writings, intended for advanced graduate students.
2 2-2 hr cl, Prereq: Grad standing or permission of instructor.

747 Research Methods in International Politics U G 5
Examines a number of research techniques and approaches common in international politics such as content analysis, simulation, mathematical modeling, and factor analysis.
2-2 hr cl, Prereq: Grad standing or permission of instructor.

750 Research on Cognition in International Politics U G 5
Problem representation and research in cognition in international politics and foreign policy, including computational research, text analysis, and experimentation examining such cognition.
Au Qtr: 2 2-2 hr cl, Prereq: Grad standing or permission of instructor.

751 Conflict and Peace U G 5
Sources and types of social conflict with special attention to international violence; causes of war, their avoidance and control.
2 2-2 hr cl, Prereq: Grad standing or permission of instructor.

752 Security Policy for the Post-Cold War World U G 5
Theories of conflict and war causation and an assessment of their durability in a new era of world politics.
Wi Qtr: 2 2-2 hr cl, Prereq: Any prior course work in international relations and permission of instructor; or grad standing.

753 Theories of International Political Economy U G 5
Contemporary literatures in international political economy; their ties to classical schools of thought in international relations and political economy; points of contention between them.
2-2 hr cl, Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 or hrs with permission of instructor.

754 Selected Topics in Soviet and Post-Soviet Foreign Policy U G 5
Intensive readings and discussions on methodological and theoretical research issues in Soviet and post-Soviet foreign policy processes and outcomes.
2 2-2 hr cl, Prereq: 630 or 655 or equiv, or grad standing, or permission of instructor.

755 American Foreign Policy Making U G 5
An examination of various approaches used to explain American foreign policy behavior including the rational actor, policy process, and bureaucratic politics models.
2-2 hr cl, Prereq: Grad standing or permission of instructor.

756 Foreign Policy Design U G 5
Problems of designing foreign policy including organizational, contextual, economic, and public opinion constraints; how to create an information retrieval system to aid decision-making.
2-2 hr cl, Prereq: Grad standing or permission of instructor.

757 Comparative Foreign Politics U G 5
Examines comparatively the sources and classes of behavior of territorial actors in the international political system.
2-2 hr cl, Prereq: Grad standing or permission of instructor.

759 International Organization U G 5
Comprehensive view of international governmental, non-governmental, and business organizations; their roles in solving problems such as poverty, war, pollution, particular attention to the U.N. system.
2-2 hr cl, Prereq: Grad standing or permission of instructor.

760 Transnational Relations U G 5
Comprehensive view of nongovernmental relations (trade, agriculture, science, religion, health, labor) between people in different nation-states with particular attention to opportunities for increased citizen control.
2 2-2 hr cl, Prereq: Grad standing or permission of instructor.

761 Political Psychology and International Relations U G 5
A seminar introducing students to theories of international relations that employ psychological perspectives; cognitive world views and political identity, especially nationalism, receive special attention.
Sp Qtr: 2 2-2 hr cl, Prereq: Grad standing or permission of instructor.

762 Theory and Explanation in Political Science U G 5
A survey of topics in the methodology and philosophy of social science including: logic, conceptualization, explanation, theory, applications to criticism in political science.
2 2-2 hr cl, Prereq: Grad standing or permission of instructor.
765 Interpretation of Texts in Political Theory U G 5
Approaches to interpretation of texts of political theory, contemporary as well as classic, grounded in study of selected texts. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

766 Selected Topics in Political Theory U G 5
Intensive joint readings and discussions concentrating upon one of the major themes, problems, or movements in political theory; topic information available from instructor. 1-2 hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 15 cr hrs.

767 Evaluation in Politics U G 5
The nature and foundations of political evaluation; methodological problems and substantive theories for the evaluation of institutions, public policy, and approaches to policy analysis. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

768 Contemporary Political Analysis U G 5
An examination of theories and concepts used in modern qualitative political analysis, including attention to political economy and political institutions. 1 3-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

774 Readings in Political Participation and Voting Behavior U G 5
Intensive examination of literature on selected topics in the area of participation and voting behavior in the United States. 2 2-hr cl. Prereq: 674 or equiv, and grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

7751 Readings in American Political Parties U G 5
Intensive study of literature on selected aspects of American political parties. 3 cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

776 Comparative Political Institutions U G 5
Study of state building process, regime types, and contemporary governmental institutions from a broad cross-national perspective. 3 cl. Prereq: Grad standing or permission of instructor.

777 Comparative Political Behavior U G 5
A cross-national examination of political behavior, including such topics as socialization, participation, voting, elite behavior, mass-elite linkages. 3 cl. Prereq: Grad standing or permission of instructor.

778 Comparative Political Parties and Interest Groups U G 5
Comparative analysis of the nature and role of political parties and interest groups in contemporary societies. 3 cl. Prereq: Grad standing or permission of instructor.

779 Readings on the Policy Process U G 5
Consideration of the basic theories, concepts, and techniques used in policy analysis; the determinants of public policy; and the impact and evaluation of public policy. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 10 cr hrs.

780 The Field of Political Economy G 5
The modern field of political economy; the interaction of markets and politics as well as the use of the tools of economics to explain social behavior. Wi Qtr. 2 2-hr cl. Not open to students with credit for Econ 780. Cross-listed in Economics.

H783 Honors Research U 3-5
Prereq: 4th yr standing and 40 cr hrs in social sciences, including 15 cr hrs in poli sci with a record of A in at least half of the poli sci courses and an average of B in the remainder; and permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtr s are required of candidates for the degree BA with distinction in poli sci. Failure to receive a mark of 5 in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. A special topic is assigned to each student and results are tested by the requirement of papers and special examinations. This course is graded SU.

785* Causal Analysis U G 5
Analysis of causal models by Simon-Blalock techniques, recursive and nonrecursive path estimation; special topics include measurement error, standardization, and ordinal data. 2 2-hr cl. Prereq: 685, 686, and grad standing or permission of instructor.

787* Scaling and Dimensional Analysis in Political Science U G 5
Topics include measurement and data theory, unfolding, proximity and dominance (Guttman) scaling, multidimensional scaling, and factor analysis. 2 2-hr cl. Prereq: 685, 686, and grad standing or permission of instruction.

788* Mathematical Theories of Politics U G 5
Introduction to various major mathematical theories of political phenomena and the role of formal analysis in political science. 2 2-hr cl. Prereq: 790 or equiv, and grad standing or permission of instructor.

790 Foundations of Political Science U G 5
Introductory study of diverse efforts to ground knowledge of politics, positivist and post-positivist views of science, sources of formal rigor, and interpretation and evaluation. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

793 Individual Studies U G 1-5
Individual studies in political science; student work is evaluated by papers and/or special examinations. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 50 cr hrs, in any combination of decimal subdivisions, with not more than 20 cr hrs in a single subdivision. These courses are graded S/U.

793.01 American Politics
793.02 Comparative Politics
793.03 International Politics
793.04 Political Theory
793.05 Public Policy

795 Teaching Political Science G 2
Examination of issues in teaching political science in colleges and universities and preparation for teaching careers. Wi Qtr. 1 2-hr cl. Prereq: Grad standing in poli sci. This course is graded S/U.

General Prerequisites for Courses Numbered 800 and 900
A general foundation in undergraduate courses in history and the social sciences is assumed. Any of the 800-level courses listed may be repeated provided that no student shall earn more than 10 hours of credit in any single course.

800 Research Seminar in American Politics G 5
Each decimal subdivision repeatable to a maximum of 10 cr hrs, including cr hrs earned for these topics under 894.

800.01 Design of Research in American Politics
Development of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty. Wi Qtr. 1 2-hr cl, arr time. Prereq: 45 cr hrs of graduate work in poli sci or permission of instructor.

800.02 Research in American Politics
Execution of a research design on a selected topic in American politics; consultation on substantive and methodological problems offered by faculty. Sp Qtr. 1 2-hr cl, arr time. Prereq: 800.01 or permission of instructor.

803* Research in Public Opinion G 5
Development and execution of a research design focusing on a problem in American public opinion; consultation on substantive and methodological problems offered by instructor. 1 2-hr cl. Prereq: 702 or permission of instructor.

812 Seminar: Political Elites and Leadership G 5
Advanced research seminar on political leadership behavior and political elite structure. Sp Qtr. 2 2-hr cl.

817* Research in Legislative Politics and Policy-Making G 5
Development and execution of a research design focusing on a particular problem in American legislative research; consultation on substantive and methodological problems offered by instructor. 1 2-hr cl. Prereq: 717 or equiv.

826 Research in Comparative Politics G 3-5
Research seminar on various topics in comparative politics. 1 2-hr cl. Prereq: 2 poli sci courses in foreign governments at 600-level or above, or equiv. Repeatable to a maximum of 15 cr hrs.

848 Research in International Politics G 3-5
Research seminar in international politics. 1 2-hr cl. Repeatable to a maximum of 15 cr hrs.
102 Elementary Portuguese U 5
Not open to students with credit for 102; or to native speakers of this language through regular course enrollment or EM credit. GEC for language courses. FL, Admis Cond courses.

102.01 Elementary Portuguese
The elements of Portuguese grammar with abundant oral and written exercises; development of conversational skill; reading, vocabulary building.
Wi Qtr. 5 cl. Prereq: 101.

102.40 Beginning Portuguese for Students with Previous Spanish
Beginning Portuguese for students with two or more years of high school Spanish, or equivalent; focus on strong similarity of sister languages.
Au Qtr. 5 cl. Prereq: 2 yrs high school Spanish.

103 Intermediate Portuguese U 5
Continuation of Portuguese grammar; reading of short stories, plays, and novels; increased attention to development of oral proficiency.
Wi Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104 Intermediate Portuguese U 5
Reading of Portuguese plays, short stories, and novels; emphasis on oral practice; non-fiction of cultural and historical significance.
Sp Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

202 Portuguese Conversation and Composition U 5
Intensive practice in conversation and composition based on materials concerning current life in Brazil and Portugal, with thorough review of grammar.
Wi Qtr. 6 cl. Prereq: 104 or 502 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.

401 Review Grammar and Composition U 5
Review of Portuguese grammar; compositions based on readings.
Sp Qtr. 3 80-min cl. Prereq: 104.

501 Portuguese for Spanish Speakers I U G 5
Rapid introduction to Portuguese language intended for students with at least intermediate-level Spanish skills.
Su (1st term) Qtr. 5 cl. Prereq: Spanish 201 or equiv. Not open to students with credit for 101, 102, 103, or 104.

502 Portuguese for Spanish Speakers II U G 5
Continuation of 501; Portuguese language for students with at least intermediate-level Spanish skills.
Su (2nd term) Qtr. 5 cl. Prereq: 501. Not open to students with credit for 101, 102, 103, or 104.

510 Portuguese Translation U G 5
Advanced practice in Portuguese-to-English translation based primarily on the contemporary written Portuguese of Brazil and Portugal; emphasis on formal grammar and style.
Au Qtr. 3 80-min cl. Prereq: 401 or permission of instructor.

551 Survey of Portuguese and Brazilian Literatures I U G 5
Overview of Portuguese and Brazilian literatures from the 12th to 18th centuries, with emphasis on representative authors and literary works.
Au Qtr. 2 2-cl. Prereq: 401, or 502 and grad standing, or permission of instructor. Not open to students with credit for 521.

552 Survey of Portuguese and Brazilian Literatures II U G 5
Overview of Portuguese and Brazilian literatures from the 19th and 20th centuries, with emphasis on representative authors and literary works.
Wi Qtr. 2 2-cl. Prereq: 401, or 502 and grad standing, or permission of instructor. Not open to students with credit for 521.

560 Portuguese Culture and Civilization U G 5
The culture of Portugal and Portuguese Africa from their founding to the present through the study of selected Portuguese-language literature, news, and film.
2 2-hr cl. Prereq: 202 or equiv.

561 Brazilian Culture and Civilization U G 5
Study of the development of Brazilian culture through its Portuguese language, literature, folklore, music, art, and film; special emphasis on contemporary issues.
Wi Qtr. 2 2-hr cl. Prereq: 401 or permission of instructor.

611* The Portuguese Language U G 5
Phonetic transcription from tapes of major continental and Brazilian dialects; the phonological pattern of modern Portuguese; general characteristics of its historical evolution from Hispanic-Romance.
4 cl, 1 lab hr. Prereq: 102 and jr standing, or permission of instructor.
650* Topics in Literature of the Portuguese-Speaking World
U G 5
Intensive exploration of a specific topic or problem; topic varies, for example: modern Brazilian novel, Luso-African literature, Portuguese poetry since 1974. 
Sp Qtr. 2-3 cr. Prereq: 551 and 552, or 502 and grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs, including cr hrs earned in 523.

693 Individual Studies U G 1-15
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

694 Group Studies U G 1-15
Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. 
Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

730 Studies in Portuguese Linguistics G 5
Analysis of Portuguese morphology and phonology using contemporary linguistic framework; topic varies from year to year and may be historical or synchronic. 
Wi Qtr. 2-2 hr cl. Prereq: Linguistics 601 or Spanish 730, and permission of instructor. Repeatable to a maximum of 10 cr hrs.

H783 Honors Research U 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC Honors Committee approval of project, a minimum 3.50 pt hr ratio in the field of distinction, or standing, and CPRH commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

893 Individual Studies G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

894 Group Studies G 1-15
Investigation of minor problems in the various fields of Portuguese literature and language.
Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.

Preventive Medicine
(See Public Health)

Psychiatry
140 Neuropsychiatric Hospital, 1670 Upham Drive, 293-8292

793 Individual Studies in Psychiatry P 6, 12, 18 G 1-18
A supervised, scholarly investigation of some aspects of psychiatry in which there is interest by the student and expertise by the faculty. 1, 2, or 3 crmths. Offered all months (procl), Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Adequate clinical training in psychiatry and permission of chairperson and instructor. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

850 Seminars in Psychiatry G 1-6
A—Clinical Psychiatry
B—Group Therapy
C—Psychotherapy
D—Psychiatric Literature
E—Child Psychiatry
1 cl. Prereq: Permission of chairperson and instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

999 Psychiatry Research G Arr
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. Prereq: MD and residency in psychiatry. This course is graded S/U.

Psychology
142 Townsend Hall, 1885 Neil Avenue, 292-6741

100 General Psychology U 5
Introductory psychology, a prerequisite for advanced courses; the application of the scientific method to behavior; topics include learning, motivation, perception, personality, physiological basis of behavior. 
Su, Au, Wi, Sp Qtrs. 5 cl. H100 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 100. SS Admin Cond course.

101 Advanced General Psychology U 5
Continuation of 100 with further emphasis on the development of a scientific attitude toward personal psychological problems in the fields of learning, thinking, intelligence, and personality. 
Au, Wi, Sp Qtrs. 5 cl. H101 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 100. SS Admin Cond course.

120 The Psychology of Academic and Personal Effectiveness U 3
A survey of theories and practices designed to improve higher level skills in reading, perception, learning, and adjustments. 
Au, Wi, Sp Qtrs. 2 cl. 1 2-hr lab.

130 Advising College Students U 1-4
Selected students will study the dynamics of and learn skills related to the career, scholastic, social, and personal development of college students. 
Au Qtr. Prereq: Permission of Instructor. Repeatable to a maximum of 4 cr hrs.

210 Educational Psychology for Medical Personnel U 5
Consideration of human capacities, abilities, interests, individual differences, and overall development; aspects of learning, personality, and physiological correlates of psychological phenomena of interest to medical personnel. 
Au, Wi, Sp Qtrs. 5 cl. Prereq: 100. Not open to students with credit for 220. SS Admin Cond course.

230 Introduction to Educational Psychology U 5
Facts and principles of human development and learning are applied to the problems of education; emphasis on scientific evidence in the solution of educational problems. 
Au, Wi, Sp Qtrs. 5 cl. Prereq: 100. Not open to freshmen or to students with credit for 210. SS Admin Cond course.

300 Research in Psychology: An Introduction U 4
An overview of issues, methods, and techniques of scientific psychological research. 
Au, Wi, Sp Qtrs. 3 1-hr cl or 2 1½-hr cl. Prereq: 100.

302 Introduction to the Psychology of Listening and Reading U 4
The recognition of spoken and written words will be traced from their registration by the senses to their storage in memory. 
Wi Qtr. 2 cl, 1 disc/lab. Prereq: 100 and 219 or 320. Not open to students with credit for 602.

310 Basic Psychology: Perception U 4
Theory, methods, and physiological correlates of sensory and perceptual processes; emphasis on the relation of behavior to stimulus variation. 
Au, Wi, Sp Qtrs. 3 cl. Prereq: 100, and 210 or 260 or Stat 145 or 245.

311 General Psychology: Motivation and Action U 3
A behavioristic presentation of experimental work on learning and motivation. 
Wi Qtr. 3 cl. Prereq: 100; prereq or concurs: 219 or 320, or Stat 145 or 245.

312 Learning, Memory, and Cognition U 4
An introduction to experimental study of human memory, learning, and cognition. 
Wi, Sp Qtrs. 2 2-hr cl. Prereq: 100; and 219 or 320, or Stat 145 or 245.

313 Introduction to Psychobiology U 3
Introduction to the neural and behavioral foundations of psychobiology. 
Au Qtr. 3 cl. Prereq: 100.

320 Introduction to Data Analysis in Psychology U 3
Introduction to statistical data analysis; random samples, graphical and numerical techniques of descriptive statistics, correlation, regression, probability, sampling distribution, and hypothesis testing. 
Au, Wi, Sp Qtrs. 2 1½-hr cl, 1 2-hr lab. Prereq: Math 152 or equiv. Not open to students with credit for 219 or 394 Sp Qtr 1995.
331 Quantitative and Statistical Methods in Psychology U 4
A concentrated examination of applications of statistical tools in inference in contemporary psychology; hypothesis testing, regression, correlation, and analysis of variance.
Au, Wi, Sp Qtrs. 2 cl. 1 1/2 hr lab. Prereq: 100, and 219 or 320, or Stat 145 or 245. Not open to students with less than a grade of C- in 219 or 395; or to students with credit for 221.

331 Psychophatology and Psychotherapy I U 3
Examination of current problems, issues, theories, and approaches to psychological deviance.
Au, Wi Qtrs. H331; H331 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq for 331: 100. Prereq for H331: 100 and 3.2 CPHR, or permission of instructor. Not open to students with credit for 350.01.

332 Psychopathology and Psychotherapy II U 3
Continuation of 331; focus on psycho-therapeutic approaches.
Sp Qtr. Prereq: 351.

333i Human Behavior Problems U 3
Analyses of behavior patterns often considered undesirable or otherwise problematic; emphasis on behavioral definitions and analyses of problems, and on behavioral interventions.
Au Qtr. 2 1 1/2-hr cl. Prereq: 100.

333i General Survey

335 Psychology of Adjustment U 4
Examination of psychological concepts and theories related to individual adjustment and adaptation.
Su, Au, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 100.

340 Introduction to Life Span Developmental Psychology U 3
A survey of developmental psychology including some phylogenetic perspective.
Au Qtr. 3 cl. Prereq: 100.

350 Contemporary Issues in Developmental Psychology U 3
A survey course acquainting students with issues resulting from the social changes of the past decade and from an increased interest in the life span.
Au, Sp Qtrs. 3 cl. Prereq: 100.

367 Second Writing Course U 5
Au, Wi, Sp Qtrs. 2 2-hr cl or 4 cl. Prereq: 100, English 110 or 111 or equiv., and soph standing or above. GEC second writing courses.

367.01 Social Psychology
Survey of group processes as they affect individual behavior; topics include individual motivation, group behavior, attitudes, and perception of self and others. H367.01 (honors) may be available to students in the honors program or by permission of the dept.

367.02 Applications of Psychology
Introduction to fields of applied psychology; use of psychological methods and principles in understanding and solving problems in a variety of organizational settings.

371 Language and the Mind U 5
Introduction to psychological processes for producing and understanding speech, the means by which these processes arise in the child, and their bases in the brain.
Su, Au, Wi Qtrs. 3 1 1/2-hr cl. H371 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 100 or Linguist 201 or 202. Not open to students with credit for Linguist 211 or 371. Cross-listed in Linguistics. GEC soc sci individuals and groups course.

375 Stereotyping and Prejudice U 4
Lectures address experimental research in stereotyping and prejudice; readings focus on historical, cultural, and sociological perspectives on issues related to gender, ethnicity, and social class.
Sp Qtr. 3 cl. Prereq: 100. GEC social diversity course.

394i Group Studies U 1-5
Undergraduate seminar; topics vary and will be announced.
Su, Au, Wi, Sp Qtrs. Prereq: 100. Repeatable to a maximum of 10 cr hrs, including cr hrs earned in 294.

475 The Self U 5
Survey of classic and contemporary theory and research on social psychological study of the self, diverse approaches, and various gender, ethnic, and cross-cultural perspectives.
Wi Qtr. 2 2-hr cl. Prereq: 367.01 or 367.02 or 375.

500 Experimental Psychology U 5
An overview of experimental psychological techniques with experiments selected for cultural value, as preparation for technical study; and to represent paradigms used in human and animal research.
Au, Wi Qtrs. 2 cl. 3 lab hrs. Prereq: 219 or 220 or 320, or Stat 145 or 245, and 6 cr hrs above 300, including at least one of 310, 311, or 312, and English 110 or 111; or equiv with written permission of instructor. Open only to psych majors. GEC third writing course.

501 Advanced Psychobiology U 4
Advanced discussion of contemporary issues in psychobiology, including: synaptic pharmacology, drugs, and behavior, neurodegenerative diseases and the biological bases of psychopathology.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 313.

503 Introduction to Cognitive Psychology U 4
A study of cognitive processes from an information processing perspective, including attention, memory, language representation, reasoning, problem solving, and other.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 320 or 321, or Stat 145 or 245, and 310 or 312, or permission of instructor.

H504 Control Theory and Skilled Behavior U 5
Control theory is explored as an analytic tool for understanding skilled behavior.
Au Qtr. 3 cl. 2 lab hrs. Prereq: Math 152 or equiv., or permission of instructor.

505 Contemporary Viewpoints in Psychology U 3
A consideration of the development of modern scientific psychology from its roots in the school of the 19th century to its contemporary status.
Sp Qtr. 3 cl. Prereq: 100 and an additional 11 cr hrs in psych.

H506 Contemporary Issues in Neuroscience U 2
Distinguished OSU neuroscientists will discuss contemporary issues, methodologies, results and future directions within their respective fields, including: molecular/cellular, integrated systems/behavioral and clinical neuroscience.
Sp Qtr. 1 1 1/2-hr cl. Prereq: Permission of instructor.

508 Psychology of Judgment and Decision-Making U 5
An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty.
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. 1 2-hr lab. H508 (honors) may be available to students enrolled in an honors program or by permission of dept; field trips may be required. Prereq: 219 or 320, or Stat 145 or 245 or equiv.; or permission of instructor.

510 Research Methods in Cognitive Psychology U 5
Issues in experimental design; laboratory experiments include topics such as memory, perceprion, and attention.
Wi, Sp Qtrs. 2 cl. 1 1/3 hr lab. Prereq: 219 or 220 or 320, or Stat 145 or 245; and jr or sr standing. Open only to psych majors. Not open to students with credit for 500. GEC third writing course.

511 Psychological Testing U 4
An overview of theoretical and practical aspects of the assessment and prediction of human behavior; topics include achievement, intelligence, personality, attitudes, interests, and interpersonal relations.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 100 or 219 or 221 or 320 or 321 or Stat 145 or 245.

513 Introduction to Cognitive Neuroscience U 4
Examination of the neuroscientific approach to the study of cognition; primary focus on the psychobiology of memory, attention, language, and spatial orientation.
Au Qtr. 2 1 1/2-hr cl. Prereq: 313 or permission of instructor.

520 Experimental Social Psychology U 5
Training in experimental and qualitative methods in social psychology.
Au, Wi, Sp Qtrs. 2 cl. 4 lab hrs. Prereq: 219 or 221 or 320 or 321 or Stat 145 or 245, and permission of instructor. Open only to psych majors. GEC third writing course.

521 Personnel Psychology U 4
Overview of theory, method, and practices of personnel psychology; job analysis, recruiting, personnel selection, performance appraisal, and training.
Au, Wi, Sp Qtrs. 2 1 1/2-hr cl. H521 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 219 or 220, or 320, or Stat 145 or 245.

522 Organizational Psychology U 4
Overview of theory, method, and practice of organizational psychology: motivation, job attitudes, leadership, groups, organizational design.
Au, Sp Qtrs. 2 1 1/2-hr cl. H522 (honors) may be available to students enrolled in an honors program or by permission of dept honors committee. Prereq: 100; and 219 or 220, or 320 or Stat 145 or 245.
530 Psychology of Personality U G 3
Major theoretical and research orientations in the study of personality; consideration of psychosomatic processes involved in the attribution of personality characteristics.
Wi, Sp Qtrs. 3 cl. Prereq: 100 and an additional 5 cr or hrs in psych.

531 Clinical Psychology and Alternative Aspects U G 3
Prereq: 100 and an additional 10 cr or hrs in psych.
531.03 Health Psychology U 4
Introduction to health psychology; health-promoting and health-damaging behaviors; modification of health behaviors; stress and coping; management of illness; stress management strategies.
Sp Qtr. 2 1 1/2-hr cl.

539 Stress, Social Support, and the Professional Helper U G 3
Stress at work and elsewhere; emphasis on treatment through social support.
Wi Qtr. 3 cl. Prereq: 100 and an additional 5 cr or hrs of course work in psych. Not open to students with credit for 640. Designed for health professionals, personnel workers, teachers, and related specialists in human services.

540 Counseling Psychology: An Introduction U G 4
Introduction to the theories, research, and practice of counseling psychology.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 100 and an additional 5 cr or hrs in psych.

541 Educational and Vocational Appraisal U G 4
Theory and techniques of assessment of individual characteristics; assessment techniques used in counseling situations.
Su, Au Qtrs. 3 cl. Prereq: 100 and an additional 5 cr or hrs of course work in psych.

542 Vocational Psychology U G 3
Survey of the psychological aspects of work and their implication for vocational development; the use of labor force and occupational information in vocational choice.
Au Qtr. 3 cl. Prereq: 100 and an additional 5 cr or hrs of course work in psych.

543 Psychology of Women U G 5
Exploration of the nature and causes of sex differences in behavior patterns and factors influencing development of women through psychological theory and research.
4 cl. Prereq: 100 and an additional 7 cr or hrs in psych. Not open to psych grad students.

545 Cross-Cultural Psychology U G 4
Introduction to cross-cultural theories and research in various specialties in psychology (e.g., social, developmental, and abnormal psychology).
Wi Qtr. 2 1 1/2-hr cl. Prereq: 100.

550 Psychology of Childhood U G 4
Presentation of psychological aspects of growth and development in early and middle childhood.
Su, Au, Wi, Sp Qtrs. 3 cl. H550 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 100.

551 Adolescence U G 5
An examination of the biological, psychological, and social aspects of normal adolescent development.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 100.

552 Psychology of the Adult Years U G 3
Theory and research related to adulthood as a sequence of psychological stages involving adjustment and coping behaviors; relationship of adulthood to other life-span stages.
Sp Qtr. 3 cl. Prereq: 100.

560 Educational Psychology U G 3
Critical appraisal of the implications for education of modern psychological findings in advanced educational psychology.
Su Qtr. 3 cl. Prereq: 100 and an additional 5 cr or hrs in psych.

571 Psychology of Developmental Disability U G 4
Overview of developmental disabilities including causes, nature, and psychological characteristics; diagnosis and psychometric assessments; and behavioral, psycho-educational, and biological forms of prevention and intervention.
Wi or Sp Qtrs. 3 cl. arr. practicum. Prereq: 100 and an additional 5 cr or hrs in psych; or written permission of instructor. A 20-hr practicum at select off-campus sites involving active, hands-on experiences with developmental disabilities.

594 Group Studies U G 1-5
Topics vary from quarter to quarter and will be announced at least one month in advance.
Su, Au, Wi, Sp Qtrs. H594 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 100 and an additional 5 cr or hrs in psych. Repeatable to a maximum of 10 cr or hrs.

600 Psychology of Learning U G 5
The study of principles which underlie the discovery, fixation, and retention of behavior; emphasis on theoretical formulation of the conditions necessary for learning and remembering.
Au Qtr. 4 cl. Prereq: 100 and an additional 5 hrs in psych.

601 Comparative Psychology U G 3
Research on animal behavior by psychologists and ethnologists; studies of the behavior of different species in the lab and in the field.
Wi Qtr. 3 cl. Prereq: 100 and an additional 15 cr or hrs in psy or zoology, or permission of instructor.

602 Psychology of Listening and Reading U G 3
Introductory survey of work on reading and the perception of speech; emphasis on reading with a focus on the underlying perceptual and cognitive processes.
Au Qtr. 2 1 1/2-hr cl. Prereq: 100.

603 Visual Perception U G 3
Principles, theories, and methods relevant to the study of visual perception; emphasis on the availability and usefulness of visual information.
Au Qtr. 3 cl. Prereq: 310 or permission of instructor.

606 High-Level Vision U G 4
Visual perception of solid shape, models of object recognition, perception of self-motion and of action.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 310 or 603 or permission of instructor.

608 Introduction to Mathematical Psychology U G 3
Survey of current topics in mathematical psychology; topics include measurement theory, scaling, utility theory, subjective probability, decision making in uncertain situations, choice theory.
Au Qtr. 3 cl. Prereq: 221, or 321 or equiv., or permission of instructor. Not open to students with credit for 615.

609 Introduction to Mathematical Models in Experimental Psychology U G 4
A survey of mathematical models and theories in important areas of experimental psychology; models of perceptual and cognitive processes, memory, and learning.
Wi Qtr. 2 2-hr cl. Prereq: 221, or 321 and 608; or grad standing.

610 Contemporary Mathematical Models and Theories in Psychology U G 4
Topics include axiomatic, geometric, conjoint measurement, functional measurement, and articial intelligence models.
Sp Qtr. Prereq: 221, or 321 and 608; or grad standing.

611 Educational Testing U G 3
A service course for those majoring in elementary and secondary education, guidance, school psychology, and school administration; stress on use of measurements in school.
Su Qtr. 3 cl. Prereq: 100 and an additional 10 cr or hrs in psych.

612 Introduction to Cognitive Science U G 3
Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.
Wi Qtr. 2 1 1/2-hr cl. Prereq: Permission of instructor or a total of 12 cr or hrs from at least two of the following areas: cptr/inf, linguist, philos, and psych. Not open to students with credit for 794 (SP Qtr 1989) or 794A (WI Qtr 1990). Cptr/Inf 612, Linguist 612, Philos 612. Cross-listed in Computer and Information Science, Linguistics, and Philosophy.

615 Psycholinguistics U G 5
An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing.
Wi Qtr. 3 1 1/2-hr cl. Prereq: Linguist 601 or permission of instructor. Not open to students with credit for Linguist 615 or 671. Cross-listed in Linguistics.

616 Psychological Scaling U G 4
Theory and applications of unidimensional and multidimensional scaling methods for proximity and preference data; emphasis on multidimensional scaling.
Wi Qtr. 2 2-hr cl. Prereq: 608 or grad standing.

617 Neural Network Models in Psychology U G 4
Basic principles of neural network modeling and their applications in perception, memory, and language.
Wi Qtr. 1 2-hr cl, 1 2-hr cptr lab. Prereq: 221, or 321 and 608, or grad standing or permission of instructor; calculus and matrix algebra, and working knowledge of PC or Macintosh computer.
619 Visual Information Processing U G 5
Rapid visual decisions: how the visual representation is formed, stored, and interpreted, enabling one to read, drive, and look for and compare visual objects.
Sp Qtr. 3 cr. Prereq: 100 and an additional 7 cr hrs of psych beyond the 300 level (210 or 212 or 250 recommended).

520 Human Performance U G 5
Research and theory on perceptual, cognitive, and motor processes that limit performance; topics include memory, attention, pattern discrimination, motor control.
Au Qtr. 2 cr. Prereq: 100 and an additional 7 cr hrs of psych beyond the 300 level (310 or 312 or 500 recommended).

624 Psychology of Monkeys and Apes U G 3
Research about monkeys and apes with emphasis on their learning, arts, memory, curiosity, language, and neuropsychological problems.
Sp Qtr. 3 cr. Prereq: 100 or permission of instructor.

625 Introduction to Auditory Perception U G 3
Theory and research in auditory perception; traditional psychoacoustic and new ecological approaches.
Sp Qtr. 3 cr. Prereq: 100; and 219 or 220 or 320, or Stat 145 or 245; and 310.

626 Sensory Psychobiology U G 3
Introduction to neural mechanisms of sensation: transduction, neuroanatomy, neurochemistry, and neuropsychological coding mechanisms for vision, audition, somatosensation, visceral sensation, balance, taste, and smell.
Au Qtr. 1 21⁄2-hr cr. Prereq: 501 or Zoology 532 or 632, or permission of instructor.

627 Developmental Psychobiology U G 4
The psychobiological origins of mammalian behavior, including: neural development, sensorimotor and cognitive development, and recovery of function after brain damage.
Sp Qtr. 2 11⁄2-hr cr. Prereq: 313 or 501 or permission of instructor.

630 Psychology of Public Attitudes U G 3
Attitude organization and change; study of the determinants of attitude.
Au Qtr. 3 cr. Prereq: 219 or 220 or 320, or Stat 145 or 245, and 367.01.

652 Behavior Modification with Children and Youth U G 3
Theory and practice of behavior modification; emphasis on experience with individual children and youth and consultation within applied settings.
Wi Qtr. 1 3-hr cr. lab arr. Prereq: 571 or equiv, 600, and permission of instructor. Not open to students with credit for 852.01.

662 Psychology of Creativity U G 3
A critical examination of conceptual, theoretical, and methodological problems related to the systematic study of creativity; special attention to background factors related to creative behavior.
Au Qtr. 3 cr. Prereq: 100 and an additional 10 cr hrs in psych.

665 Psychology of the Later Years U G 3
Critical consideration of major gerontological issues facing aged adults; theories, methodologies, and research into human aging process.
Su, Wi, Sp Qtrs. 3 cr. Prereq: 100.

575 Social Cognition U G 3
Introduction to the cognitive underpinnings of social behavior.
Wi Qtr. 1 3-hr cr. Prereq: 219 or 220 or 320, or Stat 145 or 245, and 367.01; or grad standing.

681 Development and Psychopathology U G 5
Examines theories and research on psychopathology (e.g., autism) during infancy, childhood, and adolescence from a developmental-contextual perspective; emphasis on description, prevalence, etiology, prognosis, and assessment.
Su Qtr. 3 cr. 1 hr diagnostic team meeting. Prereq: 100 and 550 or permission of instructor.

684 Psychology of Delinquency U G 5
Characterization, risk and protective factors, and treatment; emphasis on current theories and research.
Su, Wi Qtrs. 2 11⁄2-hr cr. Prereq: 551 or equiv.

688 Laboratories in Industrial/Organizational Psychology U G 4
Laboratory and field experience in job analysis, selection, validation, measurement, interviewing, training, leadership, and group and organizational processes.
Au, Wi, Sp Qtrs. 4 cr. Prereq: 100 and permission of instructor. Repeatable to a maximum of 40 cr hrs in any combination of alphabetical subdivisions.

A—Job and Task Analysis
B—Development of Criteria
C—Selection Devices
D—Placement and Classification
E—Validation Procedures
F—Individual Differences Measures
G—Satisfaction Measures
I—Training and Development
J—Leadership
K—Group Processes
L—Organizational Processes
M—Interviewing

693 Individual Studies U G 1–15
Individual reading or research projects by special agreement between instructor and student.
Su, Au, Wi, Sp Qtrs. Prereq: 100, an additional 9 cr hrs in psych, and permission of instructor. Repeatable to a maximum of 30 cr hrs for undergrads and to a maximum of 45 cr hrs for grad students in any combination of decimal subdivisions. These courses are graded S/U.

693.01 Clinical Psychology
693.02 Counseling Psychology
693.03 Developmental Psychology
693.04 Human Experimental Psychology
693.05 Industrial Psychology
693.06 Quantitative Psychology
693.07 Social Psychology
693.08 Psychobiology
693.09 Mental Retardation and Developmental Disabilities

695 Seminars in Psychology U G 2–5
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor; either 219 or 220 or 320, or Stat 145 or 245, and 17 cr hrs of psych course work above the 200 level; or grad standing. No more than 6 cr hrs in any combination of decimal subdivisions may be counted toward the undergrad major.

695.01 Clinical
695.02 Counseling
695.06 Quantitative
695.07 Social
695.08 Psychobiology

697 Study at a Foreign Institution U G 1–15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 100 and written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Interprofessional Education U G 3
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation. Repeatable to a maximum of 9 cr hrs in any combination of decimal subdivisions; subdivisions not repeatable. Limited to students in allied medical professions, education, law, medicine, nursing, psychology, social work, and theology (Columbus Cluster of Theological Schools).

700.01 Interprofessional Care U G 3
Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.
Wi Qtr. 2 11⁄2-hr cr.

700.04 Interprofessional Seminar in Clinical Practice U G 3
Interprofessional teamwork in clinical settings.
Wi Qtr. 2 11⁄2-hr cr. 5 hrs clinical, Prereq: Permission of instructor. Limited to students enrolled in child abuse and neglect study program.

700.07 Interprofessional Approaches to Child Abuse and Neglect
Interprofessional exploration of issues in the identification, treatment, and prevention of child abuse and neglect.
Au Qtr. Prereq: Permission of instructor.

710 Laboratory in Test Design U G 3
Practices in writing, editing, administering, and validating personality and ability measures.
Sp Qtr. 1 cr, 2 lab hrs. Prereq: Permission of instructor. Repeatable to a maximum of 6 cr hrs.

717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3
717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models. Wi Qtr. 1 hr-cl. Not open to students with credit for 717.01 in any of the cross-listed areas.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues
Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.
Su, Sp Qtrs. 1-2 hr-cl. Not open to students with credit for 717.02 in any of the cross-listed areas.

717.03 Developmental Disabilities U G 3
Focus on the most pertinent scientific and societal issues of developmental disabilities.
Au Qtr. 1 hr-cl. Not open to students with credit for 717.03 in any of the cross-listed areas. Cross-listed in Allied Medicine, Educational Services and Research, Health, Physical Education, and Recreation, Human Nutrition and Food Management, and Social Work.

720 Psychology Applied to Sport U G 3
Psychology applied to sport; focus on the athlete; consideration of special population (women, minorities, and youth); the sport psychologist's role.
Wt Qtr. 2 1/2 hr-cl. Prereq: 540 or psych major or grad standing or permission of instructor. Not open to students with credit for 794C Wi Qtr 1986 or 1989.

737 Proseminar in Cognitive Science U G 2
An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Sp Qtr. 1 hr-cl. Prereq: Cptwrln 612, Linguit 612, Psych 612, or Philos 612, or permission of instructor. Repeatable to a maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial Systems Engineering, Linguistics, Philosophy, and Speech and Hearing Science.

7401 Aging and Cognition: Developmental Perspectives U G 3
An examination of the relationship between cognitive development and aging; topics include intelligence, memory, learning, perception, and sensation in relation to normal and pathological aging.
Wt Qtr. 2 1/2 hr-cl. Prereq: 100. Not open to students with credit for 794A Wi Qtr 1983 or Wi Qtr 1984.

H783 Honors Research U 3
A program of readings, conferences, and reports selected to aid the student in completing a senior honors thesis.
Au, Wt, Sp Qtrs. 1 3-hr-cl. Prereq: Candidate for degree with distinction. Repeatable to a maximum of 9 cr hrs including or hrs earned in H599.

788* Laboratory in Attitude Measurement U G 3
Wi Qtr. 1 cl, 4 lab hrs. Prereq: Written permission of instructor.

794 Group Studies U G 1-5
The topics vary from quarter to quarter and will be announced at least one month in advance.
Au, Wt, Sp Qtrs. 3 cl. Prereq: 15 cr hrs in psych at the 500 level or above and permission of instructor.

800 Advanced Experimental Laboratory G 3-15
Advanced training in the experimental and quantitative methods in the several areas of general experimental psychology and comparative psychology.
Au Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

801 Advanced Theoretical Psychology G 4
A description and evaluation of the major advanced psychological behavior theories.
Wt, Sp Qtrs. 4 cl.

802 Advanced Psychology of Motivation G 3
An examination of the experimental and theoretical material on: physiological drives, development and maintenance of secondary motives; perception and motivation, conflict.
Wt Qtr. 3 cl. Prereq: 20 cr hrs in psych including 311 or 600 or permission of instructor.

803I Theories of Perception G 3
Survey of history and theories of perception, emphasizing different concepts of stimulation, research methods, and the roles of prior experience, motor performance, and attention.
Sp Qtr. 3 cl.

804 Advanced Comparative Psychology G 3
Contemporary literature in comparative psychology.
Sp Qtr. 3 cl. Prereq: 601.

805 Principles of Psychophysiology G 5
805.01 Principles of Psychophysiology I
Introduction to psychophysiology; history of the study of psychological phenomena related to the body; overview of methods of psychophysiology; concepts and principles of behavior to emerge from psycho-physiological research.
Au Qtr. 2 1/2-hr cl. Prereq: Permission of instructor.

805.02 Principles of Psychophysiology II
Introduction to systemic psychophysiology; noninvasive methods for measuring physiological events; paradigms for investigating psychological questions using noninvasive physiological measures; and concepts and principles of behavior to emerge from psycho-physiological research.
Wt Qtr. 2 1/2-hr cl. Prereq: 805.01 or permission of instructor.

805.03 Special Topics in Psychophysiology G 3
Introduction to selected topics in psychophysiology; theories in psychophysiology; problems and progress in psychophysiological research.
Sp Qtr. 2 1/2-hr cl. Prereq: 805.02 or permission of instructor.

806 Neuropsychology I G 3
An introduction to the principles governing neural integrative mechanisms; morphological nervous systems of the vertebrates; transmission in individual neurons; properties of junctions in integrative networks; elementary laws of reflex action.
Au Qtr. 3 cl.

807 Neuropsychology II G 3
Functional differentiation of the nervous systems of vertebrates; properties of principle division of the brain; organizations of the limbic system; mechanisms of sleep and waking rhythm; mechanisms of perception.
Wi Qtr. 3 cl. Prereq: 806.

808 Neuropsychology III G 3
Neural mechanisms of motivation and behavioral plasticity; control of major cyclical phenomena, including hunger, thirst, and reproduction; reactions to a periodic and continued stresses; mechanisms of the learning process.
Sp Qtr. 3 cl. Prereq: 807.

809 History and Systems of Psychology G 3
Development of psychology from the philosophical antecedents to its present status as a science and a profession; assignments in original sources as far as possible.
Au Qtr. 3 cl. Prereq: 16 cr hrs in psych.

511 Seminar in Experimental Psychology G 2
Su, Au, Wt, Sp Qtrs. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

814* Psychological Issues in Knowledge Representation G 3
Psychological approaches to how knowledge is represented by humans, including empirical and architectural constraints, formal differences, generalization abilities, and development of representations.
Su, Au Qtrs. 1 2-hr cl, 1 hr arr.

815I* Decision Processes G 4
Introductory course in the application of statistical decision theory as a normative model and analytic technique in the experimental study of cognitive processes.
Wi Qtr. 4 cl. Prereq: Grad standing in psych, undergrad inferential statistics strongly recommended.

816* Human Performance Theory G 4
Research and theory on the discrete and on the continuous cases of human information processing; topics include input processes, central processing functions, and output processes.
Wi Qtr. 3 cl. Prereq: 620 or written permission of instructor.

817 Seminar in Human Performance G 3
Wi Qtr. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.

818 Current Frameworks in Industrial and Organizational Psychology G 4
818.01 Advanced Personnel Psychology
Content and methodology of personnel psychology, including such topics as job analysis, interviewing, test validation, selection and placement systems, performance appraisal, and training.
Au Qtr. 2 2-hr cl. Not open to students with credit for 621.
818.02 Motivation and Attitudes in Work Organizations
Courses and consequences of attitudes and motivation in organizations, with emphasis on theory and research.
Wi Qtr. 2 2-hr cl. Not open to students with credit for 823.

818.03 Psychology of Organizational Effectiveness
Effects of organizations and groups on individual behavior, including interpersonal processes (groups, leadership), structural effects (task, technology, reward systems) and organizational conflict and change.
Sp Qtr. 2 2-hr cl. Not open to students with credit for 622.

819 Seminars in Industrial and Organizational Psychology G 3
2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.
A—Psychology of Individual Effectiveness.
B—Psychology of Organizational Effectiveness.
C—Human Motivation
D—Theoretical Developments and Issues. Au, Wi, Sp Qtrs.
E—Current Practices and Trends

820 Fundamentals of Factor Analysis G 4
Basic Common Factor Model and its application in psychology: model, communality estimation, factor extraction, orthogonal and oblique rotation, factor scores, confirmatory factor analysis use of computer programs.
Au Qtr. 2 2-hr cl. Prereq: Permission of instructor.

821 Seminar in Field and Experimental Research Methods G 3
Logic of the research process, use and limitations of major research strategies, and application of specific data gathering techniques with special emphasis on field settings.
Au, Wi Qtr. 3 cl. Prereq: Permission of instructor, and 821A for 821B, and 821B for 821C. Repeatable to a maximum of 9 cr hrs.

822 Psychological Assessment G 3
A critical survey and evaluation of concepts and techniques of assessment of intelligence, special aptitudes, and personality.
Au Qtr. 3 cl.

824 Seminars in Psychological Measurement G 2-4
Repeatable to a maximum of 10 cr hrs.
A—Models for Psychophysics. Wi Qtr.
B—Models for Measurement and Scaling
C—Models for Interpersonal Analysis

826 Statistics in Psychology G 4
Basic concepts of descriptive and inferential statistics; includes estimation, hypothesis testing, and introductory treatment of analysis of variance, correlation and regression, and non-parametric techniques.
Au Qtr. 2 1½-hr cl, 2 lab hrs. Prereq: 320, or Stat 145, or equiv and grad standing in psych, or permission of instructor.

827 Analysis of Variance G 4
Statistical inference in analysis of variance designs; basic concepts and procedures in one-way designs; factorial, repeated measures, randomized blocks, mixed models designs; procedures for planned and post hoc comparisons.
Wi Qtr. 2 1½-hr cl, 2 lab hrs. Prereq: 826 or equiv.

828 Correlational Analysis G 4
Correlation and regression techniques for quantitative and qualitative data analysis; simple linear regression and correlation, multiple linear regression, nominal scales, interactions; other related multivariate methods; use of computer programs.
Sp Qtr. 2 1½-hr cl, 2 lab hrs. Prereq: 827 or equiv.

830 Covariance Structure Models G 4
Theory and methods of testing models of covariance structures; general mathematical model, identification, parameter estimation, goodness of fit, model modification, and the use of computer programs such as LISREL.
Wi Qtr. 2 2-hr cl. Prereq: 820 and 828, or permission of instructor.

831 Seminars in Psychological Statistics G 1-5
1-5 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 40 cr hrs.
A—Analysis of Variance
B—Experimental Design
C—Factor Analysis
D—Mathematical Models and Theory
E—Non-Parametric Statistics. Au Qtr.
F—Quasi-Experimental Design
G—Advanced Multivariate Analysis
J—Computer Simulation Research
K—Special Topics

832 Sociomoral Development G 4
Focus upon recent work stemming from Piagetian and Eriksonian approaches; relation of specific theoretical perspectives to current issues and findings emphasized.
Au, Sp Qtrs. 2 1½-hr cl.

833 Methodological Problems in Developmental Psychology G 3
A bridge from formal statistics to current research in developmental and educational psychology with repeated measure, time series data, indices of change, etc.
Sp Qtr. 3 cl. Prereq or concur: 826 and 827 or equiv with written permission of instructor. Repeatable to a maximum of 6 cr hrs.

834 Psychology of Infancy G 3
Psychological development during the first two years of life with particular reference to neonatal period and research methodology in studies involving infants.
Wi Qtr. 1 1½-hr cl. Prereq: 837 or permission of instructor.

835 Child Development G 3
Major developmental aspects of childhood; review of theory, methodology, research studies, and historical and contemporary writing about children; consideration of interdisciplinary approaches.
Wi Qtr. 3 cl. Prereq: 837 or permission of instructor.

836 Developmental Psychology G 3
836.01 Adolescence
Comprehensive view of adolescence as a stage in human development; theory, methodology, research and application to family, school and community; relation to other developmental stages.
Sp Qtr. Prereq: 825, 835 or equiv, and permission of instructor.

836.02 Maturity and Aging
Survey of psychology of adulthood; normative episodes, problems of stress, adaptation, social interaction and physical and intellectual functioning, maturity in modern and historical cultures.
Sp Qtr. 3 cl. Prereq: Permission of instructor.

837 Nature and Direction of Human Development G 3
Critical consideration of human development, selected theories and methods of investigation including units of measurement; emergence of mind considered through the phylogenetic and ontogenetic sequence.
Au Qtr. 3 cl.

840 Practicum in Developmental Psychology G 3-9
Observation of children in a representative variety of clinical settings with particular reference to developmental phenomena of growth and behavior; application of research, diagnostic and intervention methodology.
Su, Au, Wi, Sp Qtrs. 1 cl, lab hrs. Prereq: 837, 2nd yr grad standing in psych, and permission of instructor. Repeatable to a maximum of 18 cr hrs.
This course is graded S/U.

842 Seminar in Developmental Psychology G 3
2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs. Selected topics.
A—Current Theoretical Issues
B—Development of Dimensions of Cognitive Differences
C—Development of Social Cognition
D—Cultural Influences on Human Development: Ethnic Minority Children and Adolescents
E—Social Development during Adolescence
F—Development of Creative Behavior
G—Deviant Behavior in Childhood and Adolescence
I—Aging and Senescence
J—The Development of the Self Concept
K—Cognitive Development: Issues in Cognitive Development
L—Development of Language: Deadness and Communication Disorders

843 Theories of Human Development G 3
Comparative presentation of significant major historical and modern developmental theories with specific evaluation of their relevance in the formulation of a comprehensive psychological theory.
3 cl. Prereq: 837 and 2nd yr grad standing.
843.01 Analytic and Social Learning Theory
Wi Qtr.
843.02 Cognitive, Organic, and Structural Theories
Sp Qtr.

844 Psychopathology of Childhood G 3
A study of psychopathological conditions of childhood, such as autism, schizophrenia, neurosis, acting out, and behavior problems from a developmental point of view.
3 cl. Prereq: Permission of instructor.
844.01 Concepts
Sp Qtr.
844.02 Disturbances
845 Child Psychotherapies G 3
Study of several major modes of psychotherapy with children; consideration of theore
tic foundations, principal techniques, range of applicability, and presumed means of effecting change.
Au Qtr. 1 2/1-2 hr cl. Prereq: 844 or equiv and permission of instructor.
846 Advanced Educational Psychology G 3
Critical consideration of research and theory in developmental learning and measurement as relevant to education; special attention to historical positions, assumptions, and current literature.
Wi Qtr. 3 cl. Prereq: Permission of instructor.
850 Adaptive Behavior and Developmental Disability G 3
Overview of the psychology of adaptation and its relationship to the classification, assessment, and modification of mental retardation and developmental disability.
Sp Qtr. 3 cl. Prereq: 857 or permission of instructor.
854 Issues in Adult Psychopathology G 4
To survey the phenomena of psychopathology in adults and become familiar with the present diagnostic system used by the majority of mental health professionals.
Wi, Sp Qtrs. 2-2 1/2 hr cl. Prereq: Permission of instructor.
855 Child Behavior Assessment and Consultation G 3
Theory of psychological assessment and consultation; practice in observation, interviewing, testing, documentation of behavior, writing reports and consulting on the learning and behavioral problems of children.
855.011 Introduction
Survey of validity data on the most used assessment techniques and practice in combining data for selected clinical cases.
3 cl. Prereq: Permission of instructor.
855.02 Psychodiagnostic Assessment I
Psychodiagnostic assessment with major emphasis on administration, scoring and utilization of the Rorschach psychodiagnostic technique.
Au Qtr. 3 cl. Prereq: 850, 2nd yr grad standing in psych, and permission of instructor.
855.05 Psychodiagnostic Assessment II
Psychodiagnostic assessment with major emphasis on the TAT: administration, scoring and utilization.
Wi Qtr. 3 cl. Prereq: 850, 855.02 or permission of instructor, and 2nd yr grad standing in psych.
855.06 Psychodiagnostic Assessment III
Psychodiagnostic assessment with major emphasis on the Draw-a-Person Test, and the Bender-Gestalt Test; administration, scoring, and utilization, and relationship to other tests.
Sp Qtr. 3 cl. Prereq: 850, 855.02, 855.05, or permission of instructor, and 2nd yr grad standing in psych.
856 Child Behavior Assessment and Therapy G 3
Assessment and treatment approaches for child behavior.
Sp Qtr. 2 1 1/2-2 hr cl. Prereq: Permission of instructor.
857 Psychological Problems in Mental Retardation G 4
Advanced study of psychological aspects of mental retardation; topics include theories of mental retardation, studies of sensory and perceptual processes, cognitive chronically ill and neurologically impaired.
Au Qtr. 4 cl. Prereq: Permission of instructor.
859 Seminars in the Psychology of Exceptional Children and Adults G 3
Advanced topics in research strategies and methodology; specialized topics on the growing edge of the psychology of exceptional children and adults.
Wi Qtr. 2 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.
860 Theories of Personality G 3
A critical consideration of the theories of personality structure psychology.
Su, Au Qtrns. 3 cl. Prereq: Advanced work in personality and social psych and permission of instructor.
861 Research Design and Methods in Clinical Psychology G 3
Introduction to the theory and use of clinical methods in psychology, designed for first-year graduate students in clinical psychology.
Au Qtr. 3 cl. Prereq: Permission of instructor. Open only to clinical psych grad students. Repeatable to a maximum of 6 cr hrs.
862 Problems of Human Behavior
Introduction to the study of human behavior problems; practicum involves observation and participation in field settings.
Prereq: Permission of instructor.
862.01 Lecture G 3
Au Qtr. 2 cl. Repeatable to a maximum of 6 cr hrs.
863 Psychological Dynamics
Special topics in the study of behavior.
Prereq: Permission of instructor.
863.01 Lecture G 3
Au Qtr. 3 cl. Repeatable to a maximum of 9 cr hrs.
864 Psychological Appraisal
Concepts and procedures for appraising human behavior.
Prereq: Permission of instructor. Courses (except 864.01) ordinarily involve both classroom and practicum experiences.
864.01 Lecture G 3
Theories and methods of psychological appraisal; integration of different theories and approaches.
Au Qtr. 3 cl.
864.04* Actuarial Appraisal G 1-4
Wi Qtr. 1-4 cl, and/or 2-6 lab hrs. Repeatable to a maximum of 8 cr hrs.
864.06* Special Topics G 1-4
Su Qtr. 1-4 cl, and/or 2-6 lab hrs. Repeatable to a maximum of 8 cr hrs.
866 Interventions with Individuals G 1-5
Concepts and practices of various interventions into the troubled behavior of individuals.
1-5 cl and/or 2-10 lab hrs. Prereq: Permission of instructor. Courses ordinarily involve both classroom and practicum experience. Each decimal subdivision repeatable to a maximum of 15 cr hrs.
866.01† Individual Psychotherapy
866.02 Behavior Modification
Au Qtr.
866.04† Novel and Experimental Approaches
867 Seminar in Clinical Abnormal Psychology G 3
Au, Wi, Sp Qtrns. 2 cl. Prereq: Permission of instructor. Two sections may be offered in any one qtr.
867.01 Psychopathology
Theory and research on the major classes of adult psychopathology.
Au Qtr. 1 3-5 hr cl. Prereq: Permission of instructor.
867.02† Schizophrenia
An intensive review of theory and research on schizophrenia; historical as well as contemporary conceptualizations.
Sp Qtr. 1 3-5 hr cl. Prereq: Permission of instructor.
868 Systematic Theory in Social Psychology G 3
Survey of major classic and contemporary theories in social psychology and discussion of the role of theory in scientific endeavor.
Au Qtr. Prereq: Permission of instructor. Not open to students with credit for this topic under 873.
869 Research Methodology G 2
Discussion of conceptual and methodological issues related to the ongoing work of graduate students and faculty.
Wi, Sp Qtrns. 2 cl. Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs.
870 Advanced Social Psychology G 3
Survey of research and theory in experimental social psychology; covers attitudes, social cognition, group processes, and related topics.
Au Qtr. 3 cl. Prereq: Grad standing in psych or permission of instructor.
871† Professional Altruism and Social Policy G 3
An examination of the helping specialties in terms of the languages of social policy and professionalism.
Sp Qtr. 3 cl.
872 Social Psychology Laboratory G 3
Advanced training in methods and data collection in the areas of social psychology, laboratory, and field experience.
Au, Wi, Sp Qtrns. 2 cl, 1 lab hr. Prereq: Permission of instructor. Repeatable to a maximum of 36 cr hrs.
873 Seminar in Social Psychology G 3 or 5
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs. Most subdivisions offered every other year.
A—Contemporary Attitude Theory and Research.
B—Social Behavior and Personality.
C—Attribution Theory Research.
D—Social Cognition.
F—Group Processes.
874 Brain and Cognition G 4
Cognitive processes in perception, attention, memory, and language are examined from information processing and neuropsychological perspectives; emphasizes how cognition arises in the brain.
Wi Qtr. 2 2-hr cl. Prereq: 20 cr hrs in psych or permission of instructor.

875 Practicum in Social Psychology G 3
Survey and supervised experience in using the technique and research designs of social psychology.
Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs.
875.01 Practicum in Social Psychology I
Au Qtr. 2 cl, 2 lab hrs.
875.02 Practicum in Social Psychology II
Wi Qtr. 2 cl, 2 lab hrs.
875.03 Practicum in Social Psychology III
Sp Qtr. 2 cl, 2 lab hrs.

876 Research Methods in Social Psychology G 3
Laboratory research, field research, research writing, and criticism.
3 cl. Prereq: Permission of instructor.
876.01 Research Methods in Social Psychology I
Introduction to methods in experimental social psychology; focus on laboratory-based procedures and on problems and issues of scientific inference.
Au Qtr.
876.02 Research Methods in Social Psychology II
Introduction to quasi-experimental methods; focus on problems and issues in conducting non-laboratory and field research.
Wi Qtr.
876.03 Research Methods in Social Psychology III
Introduction to research writing and critique; focus on preparation of reviews of theoretical and empirical papers.
Sp Qtr.

877 Human Learning I: Learning G 4
Introductory survey of the theoretical and empirical issues in human learning; emphasis on the analysis of learning tasks and the conditions under which learning occurs.
Au Qtr. 2 2-hr cl.

878 Human Learning II: Memory G 4
Theoretical issues and experimental research on the topic of human memory.
Wi Qtr. 2 2-hr cl.

879 Human Learning III: Cognitve Processes G 4
Theoretical and experimental research in several areas of cognition including concept learning, problem solving, and reasoning.
Sp Qtr. 2 1 1/2-hr cl. At least 10 cr hrs of undergrad psych course work.

880 Complex Information Processing in Cognition G 3
A study of high-level cognition from the perspectives of behavior, brain, and computation.
Sp Qtr. 2 1 1/2-hr cl. Prereq: Grad standing.

881 Social Ecology: Implications for Counseling G 4
Advanced graduate students relate person-environment interaction theory to practice in counseling, educational, and community settings.
Sp Qtr. 2 cl. Prereq: Written permission of instructor.

882 Psychology of Counseling
882.01 Lecture G 3
Theoretical, research, cultural and professional bases for counseling; fundamentals of interviewing; counseling procedures and techniques.
Au Qtr. 3 cl. Prereq: 13 cr hrs in psych.

882.02 Laboratory G 2
A series of practical exercises designed to apply the principles of the psychology of counseling.
Au Qtr. 4 lab hrs. Prereq: Permission of instructor.

883 Counseling Diagnostics
883.01 Lecture G 3
Theory and application of interview data, observed behavior, test results, and biographical information as a basis for diagnostics in counseling and evaluation.
Wi Qtr. 3 cl. Prereq: 13 cr hrs in psych.
883.02 Laboratory G 2
Survey of specific diagnostic techniques and tests and application through role playing.
Wi, Sp Qtr. 4 lab hrs. Prereq: Permission of instructor. This course is graded S/U.

884 Psychology of Career Development
884.01 Lecture G 4
A survey and critical analysis of literature and research regarding work, work adjustment, career choice and development, vocational exploration, and variables associated with career development.
Sp Qtr. 2 2-hr cl.
884.02 Laboratory G 2
A series of practical exercises designed to apply the principles of the psychology of career development.
Sp Qtr. 1 2-hr lab. Prereq: 882 or equiv and written permission of instructor.

885 Beginning Practicum in Counseling G 4
Supervised practice in assisting college students in their adjustment to college; emphasis on diagnosis and treatment; special help given to interviewing procedures.
Su, Au, Wi, Sp Qtrs. 2 cl, 8-10 lab hrs. Prereq: 883 and written permission of instructor. Repeatable to a maximum of 8 cr hrs. This course is graded S/U.

886 Advanced Practicum in Counseling G 4
Supervised practice in (a) assisting college students and adults with problems of personality adjustments or (b) supervising techniques through observation and discussion of work with other counselors.
Su, Au, Wi, Sp Qtrs. 2 cl, 8-10 lab hrs. Prereq: 885 and written permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

887 Seminar in Counseling Psychology G 3
Su, Au, Wi, Sp Qtrs. 2 cl. Prereq: Written permission of instructor. Repeatable to a maximum of 30 cr hrs.
A—Counseling Older Adults
B—Behavioral Therapy
C—Tests and Assessment in Counseling
D—Counseling Supervision
E—Ethics and Professional Issues
F—Cognitive Approaches to Counseling
G—Counseling Women
I—Psychodynamic Theories of Counseling
J—Psychological Assessment in a VA Hospital Setting
K—Research in Study Skills
L—Forensic Application of Psychological Assessment
M—Existential and Phenomenological Approaches to Counseling
N—Advanced Assessment and Professional Practice in Neuropsychology
P—Social Influence Process in Counseling Psychology
Q—Marriage and Family
T—Cross Cultural Counseling and Psychotherapy
W—Personality and Ability
Y—Adult Career Development Problems
Z—Special Topics

888 Psychological Study of Individuals and Groups G 3
Basic concepts and techniques of individual personnel work.
Wi Qtr. 3 cl. Prereq: Permission of instructor.

889 Practicum in Clinical Psychology G 1-30
Supervised practice in psychological assessment and intervention in the department's psychological clinic.
Su, Au, Wi, Sp Qtrs. 1-2 client contact hrs; 1-2 supervision hrs. Prereq: Permission of instructor. Open only to students in clinical psychology. Repeatable to a maximum of 30 cr hrs.

892 Workshop G 1-15
Intensive study of an area or problem in psychology.
Ann: Prereq: Vary with topic offered. Repeatable to maximum of 15 cr hrs.
A—Summer Institute in Political Psychology: Theory, 5 cr hrs. Not open to students with credit for this topic under Polit Sc 882. Cross-listed in Political Science.
B—Summer Institute in Political Psychology: Methods, 5 cr hrs. Not open to students with credit for this topic under Polit Sc 882. Cross-listed in Political Science.

912 Behavioral Pharmacology G 3
Introduction to the foundations of behavioral pharmacology; integration of human clinical and animal experimental psychopharmacological research.
Wi Qtr. 1 3-hr cl. Prereq: 591 and 502, or permission of instructor.

913 Cognitive Neuroscience G 3
Neural mechanisms of information processing.
Sp Qtr. 1 3-hr cl. Prereq: 806 and 807, or permission of instructor.
980 Supervised Field Experience in Psychology G 1-15
Supervised experience, either research or operational, in any agency doing professional psychological work such as a school system, a psychological clinic, an industrial personnel department, or a counseling center.
Su, Au, Wi, Sp Qtr. Prereq: Psych 2nd yr standing and approval of local staff of area in which student is specializing. Supervised by member of local staff and some member of the outside agency approved by the Dept of Psychology. Repeatable to a maximum of 30 cr hrs. This course is graded S/U.

990 Internship in Psychology G 1-15
Full-time supervised training in an approved predoctoral internship agency; supervision and directed experiences coordinated by student's adviser, program training director, and internship training director.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Phd candidacy, an approved dissertation proposal, and written permission of adviser. Limited to Phd candidates in counseling and clinical psych. Repeatable to a maximum of 90 or hrs. This course is graded S/U.

999 Research in Psychology G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Public Health

M-120 Starling-Loving Hall, 320 West 10th Avenue, 293-3907

685 Field Experience in Comprehensive Health Planning P 6, 12, or 18 G 6-12
Full-time assignment to a state or local health planning agency, to work on a specific project in community health under the guidance of a selected faculty adviser.
Su, Au, Wi, Sp Qtrs. Field time assigned for medical students 1, 2, or 3 months and grad students 1/2 or entire summer quarter. Prereq: Permission of instructor.

701 Design and Analysis of Comparative Biomedical Research G 4
The theory and application of basic statistical concepts as they affect design of biomedical research, integrated with application of computer statistical packages. Moeschberger.
Wi Qtr. 2 1/2-hr cl and 2-1/2-hr labs. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 764 or Vet Prev 764 or Vet Phys 764. Cross-listed in Veterinary Preventive Medicine and Veterinary Physiology and Pharmacology.

702 Biostatistics and Computers in Medical Research G 4
Review of the fundamental concepts of biostatistics, including more complex analysis of variance designs, integrated with application of computer statistical packages. Moeschberger.
Sp Qtr. 2 1/2-hr cl and 2-1/2-hr labs. Prereq: 701, grad standing in pub hth or permission of instructor. Not open to students with credit for 765 or Vet Prev 765. Cross-listed in Veterinary Preventive Medicine.

703 A Problem-Oriented Approach to Biostatistics G 4
The employment of actual health-related problems to illustrate the use of computers and applied statistical methods important to epidemiologists and other health professionals. Lanese and Moeschberger.
Au Qtr. 2-2-hr cl. Prereq: 701, and 702 or permission of instructor. Not open to students with credit for 766.

705 Health Survey Methods G 4
An introduction to health survey methods: lectures, readings, classroom, and community exercises; consideration of health planning and epidemiological applications. Nestel.
Au Qtr. 2-2-hr cl and 1-1-hr conf. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 770.

711 Epidemiology I G 4
Principles of epidemiology with special emphasis on methods employed in current epidemiologic studies. Wilkins.
Wi Qtr. 2-2-hr cl. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 800.

712 Epidemiology II G 4
Design of epidemiologic studies of major health problems; review of key studies; application of epidemiologic data to public health programs and medical care delivery. Harris.
Sp Qtr. 2-2-hr cl. Prereq. 711, grad standing in pub hth or permission of instructor. Not open to students with credit for 801.

713 Epidemiology in Environmental Health G 4
Principles and application of epidemiologic methods in the investigation and control of health problems stemming from environmental hazards. Wilkins.
Sp Qtr. 2-2-hr cl. Prereq. 711 and 712, or grad standing in pub hth or permission of instructor. Not open to students with credit for 802.

715 Current Health Problems G 4
Descriptive epidemiology and clinical features of major causes of morbidity and mortality; appraisal of current control mechanisms and policy issues. Gaauman.
Au Qtr. 2-2-hr cl. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 700.

721 Economics of Health Care I G 4
Microeconomic principles of consumer demand with applications to health care use; role of uncertainty and health insurance. Nestel.
Au Qtr. 2-2-hr cl. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 854.

722 Economics of Health Care II G 4
Microeconomic principles of supply with applications to the provision of health care services; market prices for nurses and physicians; assessment of the competitive model. Nestel.
Wi Qtr. 2-2-hr cl. Prereq: 721, or grad standing in pub hth or permission of instructor. Not open to students with credit for 852.

731 Principles of Environmental Health G 4
Survey of major environmental factors affecting human health, including air, water, and land pollution, occupational hazards, trace metals, chemical carcinogens, radiation, and noise. Wilkins.
Wi Qtr. 2-2-hr cl. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 731.

741 Public Health Organization G 4
History and development of public health agencies; structure and functions of governmental, voluntary, and proprietary health organizations. Banks/Chen.
Au Qtr. 2-2-hr cl. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 812. Field report required.

743 Preventing Disease and Promoting Health Through the Application of Behavioral and Social Science Concepts G 4
Examination of behavioral and social science concepts as the basis for public health practice; topics include transferring knowledge, motivating and aiding behavior change efforts, and working with the community. Heaney.
Wi Qtr. 2-2-hr cl.

747 Advanced Addictions Studies G 3
Current issues in pharmacology, epidemiology, public policy, prevention, diagnosis and treatment of alcohol and other drug addictions. Wi Qtr. 2 1/2-hr cl. Prereq: Grad standing in pub hth or permission of instructor.

750 Principles of Epidemiology G 3
Introduction to the nature and scope of epidemiology; survey of basic epidemiological methods and their application to selected acute and chronic health problems. Wilkins.
Au Qtr. 2 1/2-hr cl. Prereq: Grad or professional standing. Not open to students with credit for 800 or 851.

751 Principles and Applications of Epidemiology and Associated Statistical Methods I P G 3
Au Qtr. Prereq: Enrollment in MPH program or permission of instructor.

752 Principles and Applications of Epidemiology and Associated Statistical Methods II P G 3
Statistical methods in epidemiologic studies: mortality and morbidity, investigations of outbreaks of disease, design of public health, and clinical and community trials. Lanese.
Wi Qtr. 10 hrs on 3 3-day weeks. Prereq: Enrollment in MPH program or permission of instructor.

753 Principles and Applications of Epidemiology and Associated Statistical Methods III P G 3
Continuation of statistical methods relevant to epidemiology and public health, non-parametric methods, multivariate methods, and critical analyses of selected papers. Schwartzbaum.
Sp Qtr. 10 hrs on 3 3-day weeks. Prereq: Enrollment in MPH program or permission of instructor.

754 History of Public Health G 3
Development of public health services in the United States; social, economic, and cultural influences; historical background of current responses to perceived health needs.
Su Qtr. Prereq: Enrollment in MPH program or permission of instructor.
758 Program Evaluation in Public Health G 3
Examination of evaluation models for public health programs; exploration of philosophical and scientific issues in evaluation; and skill-building in both qualitative and quantitative evaluation methods.
Wi Qtr. 10 hrs on 3-3 day wknds. Prereq: Enrollment in the MPH program or permission of instructor.

761 Behavioral Epidemiology G 4
A review of the epidemiological literature that examines the relationship between behavioral factors, theories of stress, and disease processes.
Au Qtr. 2 2-hr cl. Prereq: Grad standing in pub hth or permission of instructor. Not open to students with credit for 853.

786 Biometrics Laboratory P G 3
Participation in consultations offered to biomedical researchers, combined with individualized faculty guidance. Barr.
Au, Wi, Sp Qtrs. 2 1-hr lab and 2 1-hr conf. Prereq: Grad standing in pub hth or permission of instructor. Repeatable to a maximum of 6 cr hrs.

793 Individual Studies in Public Health P 6, 12, or 18 G 2-5
1, 2, 3, or 4 months; offered all months except June. Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in pub hth or permission of instructor. Repeatable to a maximum of 24 cr hrs for professional credit and 15 cr hrs for grad credit. These courses are graded S/U.

793.02 Biometrics
Lanese and Mosaicberger.

793.04 Environmental Health
Wilkins.

793.05 Epidemiology
Keller and Wilkins.

793.08 Community Health
Keller and Banks.

793.09 Comprehensive Health Planning

793.10 Health Agency Administration
Banks.

793.11 Behavioral Sciences Studies in Health
Lanese and Banks.

794 Group Studies in Public Health P 6, 12, or 18 G 2-5
1, 2, 3, or 4 months; offered all months except June (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs for professional credit and 15 cr hrs for grad credit.

794.01 Biometrics
Lanese and Mosaicberger.

794.02 Environmental Health
Wilkins.

794.03 Epidemiology
Keller and Wilkins.

794.04 Community Health
Banks and Keller.

794.99 General

803 Health Data: Sources and Uses P G 3
Study of compilation of health and health-related data and their utilization; local, state, regional, and national surveys; and life tables and community health indices. Lanese.
Sp Qtr. Prereq: Enrollment in MPH program or permission of instructor.

813 Planning for Public Health Promotion and Disease Prevention G 3
Historical, philosophical, scientific, and empirical bases for planning and implementing public health promotion and disease prevention programs with illustrations involving community residents, employees, and minorities. Chen.
Au Qtr. 20 hrs on each of five consecutive 3-day wknds. Prereq: Admission to the MPH program or two yrs of experience in the health field.

814 Programs of Health Promotion and Disease Prevention P G 3
Theory and practice of preventive programs in personal health and environmental health, national strategies of disease prevention, and prospects for the improvement of health in the United States. Heaney.
Au Qtr. Prereq: Enrollment in MPH program or permission of instructor.

849 Pro-Seminar in Community Health Development G 2-3
Each week a basic area of community health development is presented by a specialist; the students prepare by reading assigned literature in this area, respond to questions raised during each session, and prepare reviews of the key issues.
Au, Wi, Sp Qtrs. 12-hr session per wk, and additional conferences. Prereq: Grad standing in pub hth or permission of instructor. Repeatable to a maximum of 12 cr hrs.

850 Seminar in Public Health G 1-3
Au, Wi, Sp Qtrs. Prereq: Grad standing in pub hth or permission of instructor. Repeatable to a maximum of 6 cr hrs.

857 Health Planning Laboratory G 3
Preparation in the application of planning techniques to current health problems and policy issues. Nestel.
Sp Qtr. 2 1 1/2-hr cl. Prereq: Grad standing in pub hth or permission of instructor. Repeatable to a maximum of 9 cr hrs.

885 Behavioral Approaches in Disease Prevention G 3
A survey of behavioral science literature concerning health behavior, illness behavior, and sick-role; and their impact upon programs for prevention, early detection, and amelioration of disease. Banks.
Sp Qtr. 2 3-1/2-hr cl. Prereq: Grad standing in pub hth or permission of instructor.

890 Clinical Approaches to Prevention P G 3
Study of application and evaluation of the methods of community medicine to practice of clinical medicine and other interventions at the level of the individual. Keller.
Au, Wi, Sp Qtrs. 1 3-hr cl. Prereq: Grad standing in pub hth or permission of instructor.

999 Research in Public Health G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing in pub hth or permission of instructor. This course is graded S/U.

Public Policy and Management

300 Fisher Hall, 2100 Neil Avenue, 292-9856

631 Federal Finance and Taxation Policy U G 3
The economics of government spending and taxation; analysis of the fiscal role and instruments and their effects on the economy.
1 1 1/2-hr cl. Prereq: Econ 530 or equiv. Not open to students with credit for 630 or Econ 631. Cross-listed in Economics.

633 State and Local Government Finance U G 3
Economic analysis of revenues and expenditures of state and local governments; vertical and horizontal relationships among agencies and units; specific problems in these areas.
1 1 1/2-hr cl. Prereq: Econ 530 or equiv. Not open to students with credit for Econ 633. Cross-listed in Economics.

730 Public Finance U G 5
Comprehensive survey and analysis of the principle fiscal activities of contemporary governments; roles of public sector activity; taxation principles and practice, intergovernmental relations, and current fiscal policy problems. Wi Qtr. 2 2-hr cl. Prereq: 830 or Econ 50A and grad standing, or permission of instructor. Not open to students with credit for Econ 530 or Econ 730. Cross-listed in Economics.

7951 Public Policy: The Business-Government Relationship U G 4
Business tools and strategy for influencing government; evolution and direction of public policy toward business.
2 2-hr cl. Prereq: Sr standing or permission of instructor.

7961 Managing in the Political Environment U 4
Introduction to public policy process and stakeholder approaches to issue management; strategic options and policy tools (advocacy coalitions, committees, and issue advertising), state policy incentives, and international relations.
2 2-hr cl. Prereq: Sr standing or permission of instructor.

7971 Interdepartmental Seminar U G 1-5
Two or more departments may collaborate in presenting seminars in subjects of mutual interest; topic to be announced. Repeatable by permission.

H7971 Public Policy: The Business-Government Relationship U G 4
Business tools and strategy for influencing government; evolution and direction of public policy toward business.
2 2-hr cl. Prereq: Sr standing or permission of instructor.

801 Public Policy Formulation and Administration U G 5
Analysis of the operating environment of the public administrator; public policy processes, public organization behavior, and policy formulation in the U.S. federal system.
Au Qtr. 2 2-hr cl. Prereq: Pollt Sc 300 or equiv.
Legal Environment of Public Administration 3
An examination and analysis of the constraints imposed upon public administrative processes by the legal environment including judicial policy-making and the evolving legal order.
Sp Qtr. 2 1/2-hr cl.

Public Policy Implementation 4
Policy implementation process in a political setting emphasizing planned changes; organizational design, systems analytic program management and evaluation; conflict management within a public bureaucracy.
2 2-hr cl. Prereq: 801.

Concepts and Methods of Program Evaluation 3
Provides an understanding of the conceptual, methodological, bureaucratic, political, and organizational issues surrounding evaluation research.
Wi Qtr. 1 2/1-hr cl. Prereq: 801.

Policy Problem Seminar I 3
Multidisciplinary seminar integrated with field experience in the solution of actual public administrative and policy problems; organized around problem areas.
Wi, Sp, Su, Au Qtrs. Prereq: 730, 801, 802, 604, 810, 811, 820, 821, 822, 830, 834 or permission of instructor. 2-qtr sequence with 809. Progess graded. Final grade assigned for both 808 and 809 at completion of 809.

Policy Problem Seminar II 3
Continuation of 808.
Wi, Sp, Su, Au Qtrs. Prereq: 808. Offered in a series with 808.

Strategic Management 3
The conducting of a strategic assessment of an agency; identifying strengths, weaknesses, opportunities, and threats; and with development of accompanying management strategy.
Sp Qtr. 2 2-hr cl.

Public Management and Human Relations 4
Development of management skills essential for beginning and mid-level managers and supervisors in public sector agencies.
Wi Qtr. 1 3-hr cl.

Problem Formulation and Research Methods in Public Administration 3
Introduction to types of problems encountered in public policy and management; problem formulation and basic research methods tools required to tackle them.
Au Qtr. 2 2-hr cl. Prereq: Statistics.

Governmental Information Systems Administration 3
Critical study of the administration and design of management information systems for public agencies; selected case studies.
Sp Qtr. 2 2-hr cl.

Data Analysis in Public Administration 3
Multivariate model building using theoretical and exploratory data analysis perspectives for use in public sector decision support systems; public sector case studies.
Wi Qtr. 2 2-hr cl.

Systems Analysis for Public Policy Decisions 3
Studies in the application of systems analysis to administrative and policy problems in the public sector; selected case studies and problems.
2 2-hr cl.

Economics of Public Policy and Management 4
Economic analysis applied to problems of public policy selection and government management operations; efficiency criteria, market failure, and public choice applied to administrative decision-making.
Au Qtr. 2 2-hr cl. Prereq: Econ 200 or equiv.

Public Budgeting and Spending Decisions 3
Budgeting as analysis of resource allocation, planning evaluation, and control; tools of analysis for program budgeting and measurement of program results; case studies.
Sp Qtr. 2 1/2-hr cl. Prereq: Econ 730 or equiv.

Seminar in Fiscal Administration 3
Current professional practices and issues in public sector fiscal administration, including budget and expenditure administration, revenue administration, financial management, and borrowing and debt management.
1 2-hr cl. Prereq: 834.

Financial Management 3
Exploration of capital programming and budgeting, debt management, and other aspects of major urban capital developments.
1 2/1-hr cl. Prereq: Econ 730.
Public Policy and Management

999 Research in Public Administration: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 45 cr hrs.

Radiologic Technology

School of Allied Medical Professions

340 School of Allied Medical Professions Building, 1583 Perry Street, 292-0571

200 Careers in Radiologic Technology U 1
Investigation of career opportunities, including roles and responsibilities, education, credentialing requirements, and current and future employment opportunities.
Au Qtr. 1 cl.

310 Patient Care in Radiography U 2
Principles of patient care including analysis of ethical and legal issues pertaining to the delivery of radiological services. Bruckner.
Au Qtr. 2 cl. Prereq: Enrollment in Radiologic Technology Division.

411 Radiographic Procedures I U 4
Principles of radiography of the chest, bronchial tree, abdomen, urinary systems, alimentary tract, and appendicular skeleton, with application in the laboratory. Bruckner.
Au Qtr. 3 cl, 1 2-hr lab. Prereq: Permission of instructor and enrollment in rad tech; concour: 440.

412 Radiographic Procedures II U 4
Principles of radiography of the vertebral column, spinal canal, bony thorax, cranial and visceral cranial, mammary glands, and reproductive systems. Bruckner.
Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 411.

425 Principles of Radiologic Imaging I U 3
Investigation of the principles of radiation protection and radiologic imaging; including accessory equipment used in radiology departments. Finney.
Au Qtr. 3 cl. Prereq: Enrollment in rad tech.

425 Principles of Radiologic Imaging II U 4
Evaluation of image quality, including densitometry, processor monitoring, and accessory devices. Finney.
Wi Qtr. 3 cl, 1 2-hr lab. Prereq: 425.

440 Applied Radiologic Technology I U 1-6
Clinical application of diagnostic imaging and therapeutic procedures performed in radiology. Bruckner.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in rad tech. Repeatable to a maximum of 18 cr hrs. A minimum of 17 cr hrs must be completed.

471 Radiologic Physics I U 3
An analysis of the production of X-rays including X-ray circuitry. Kowalczyk.
Sp Qtr. 3 cl. Prereq: Enrollment in rad tech.

530 Advanced Radiographic Exposure U 4
Investigation of technique exposure systems, image receptor technology, imaging equipment, and quality control as a means for controlling radiographic exposure. Finney.
Au Qtr. 3 cl, 1 2-hr lab. Prereq: 425.

540 Applied Radiologic Technology II U 1-6
Continuation of 440 emphasizing the more complex diagnostic and therapeutic procedures. Bruckner.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in rad tech and completion of 17 cr hrs of 440. Repeatable to a maximum of 24 cr hrs. A minimum of 22 cr hrs must be completed.

550 Practice U 2
Theory and experience in selected radiology specialties.
Prereq: Enrollment in rad tech and permission of instructor. Repeatable to a maximum of 8 cr hrs; individual subdivisions repeatable as electives. 4 cr hrs required of rad tech majors.

550.41 Cardiovascular and Interventional Radiologic Procedures
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

562 Computed Tomography
Supervised clinical education and instruction in the theory and operation of CT units in different health care facilities. VanDervort.
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

550.60 Magnetic Resonance Technology
Instruction and experience in the performance and interpretation of magnetic resonance. Vasilia.
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

550.65 Mammography
Supervised clinical education and instruction in mammography, including the psychological aspects, anatomy, pathology, imaging procedures, and evaluation of quality images. Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

550.75 Pediatric Imaging Procedures
Supervised clinical education and instruction in pediatric imaging, including the psychological needs, pediatric anatomy, and pediatric imaging procedures and techniques. Exem.
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education.

560 Medical Imaging Modalities U 3
Investigation of the basic physical principles of medical imaging modalities and radiation oncology. Finney.
Sp Qtr. 3 cl. Prereq: Enrollment in rad tech.

565 Administrative Aspects of Radiologic Technology U 2
Analysis of radiology department management; evaluation of radiographic equipment, federal equipment specifications, accreditation, and licensure. Sp Qtr. 2 cl. Prereq: Enrollment in rad tech.

571 Applied Diagnostic / Medical Sonography U 2
Instruction and experience in the performance and interpretation of sonographic images.
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Prereq: Enrollment in rad tech and permission of instructor. Repeatable to a maximum of 6 cr hrs. Not open to students with credit for 550.50.

572 Applied Nuclear Medicine U 2
Observation and participation in performing static and dynamic examinations requiring the use of radiopharmaceuticals. Fry.
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Prereq: Enrollment in rad tech and permission of instructor. Not open to students with credit for 550.70. Repeatable to a maximum of 6 cr hrs.

573 Applied Radiation Oncology U 2
Clinical observation and participation involving planning for and administering radiation treatment of disease. Hackworth.
Su, Au, Wi, Sp Qtrs. 8 hrs clinical education. Prereq: Enrollment in rad tech and permission of instructor. Not open to students with credit for 550.80. Repeatable to a maximum of 6 cr hrs.

590 Introduction to Angiography U 2
Introduction to the basic techniques employed in vascular and interventional procedures; emphasis placed on anatomical structures demonstrated, the equipment, and contrast agents used. Bruckner.
Sp Qtr. 2 cl. Prereq: Enrollment in rad tech.

595 Seminar U 1-3
Conference, group discussions, and presentations of selected topics.
Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: Enrollment in rad tech. Repeatable to a maximum of 9 cr hrs.

615 Radiographic Clinical Correlations U P G 3
Correlations of clinical experience relative to patient’s medical history and quality and appropriateness of diagnostic images. Bruckner.
Wi Qtr. 3 cl. Prereq: Enrollment in rad tech.

665 Operation of a Medical Imaging Department U 3
Methods of delivering radiological services including evaluation of equipment, personnel, budgeting, and the impact of federal equipment regulations.
Sp Qtr. 3 cl. Prereq: Enrollment in rad tech. Not open to students with credit for 550.10.

668 Quality Control in Diagnostic Medical Imaging U 3
Examination of quality control methods utilized for radiographic CT and MRI imaging including management, implementation, and evaluation aspects. Finney.
Wi Qtr. 3 cl. Prereq: 530 or permission of instructor. Not open to students with credit for 660.

670 Radiobiology for the Radiologic Technologist U 3
Fundamentals of radiobiological principles and radioprotective procedures, including cellular and whole body as it relates to radiologic technology. Finney and Waltman.
Wi Qtr. 3 cl. Prereq: Enrollment in rad tech.

672 Radiologic Sectional Anatomy U 3
Identification of anatomic structures as seen in cadaver cross-sections, emphasizing the correlation of anatomy and diagnostic computer generated patient images. Bruckner.
Su Qtr. 1 cl, 2 2-hr labs. Prereq: Enrollment in rad tech.
867 Radiologic Technology Instruction U 2-6
Planned professional teaching experience under supervision in a radiologic technology education program. Finney.
Wi. Arr. Prereq: Hth Ed 400 and permission of instructor, enrollment in radiotech or appropriate professional certification. Repeatable to a maximum of 12 cr hrs.

Radiology
S209 Rhodes Hall, 410 West 10th Avenue, 283-8315

670 Medical Radiation Physics U P G 2
Ionizing radiations, their production, properties and interaction with materials of medical interest; physical principles of radiation therapy, radiation dosimetry, and radiation protection. Au, Sp Qtrs. 2 cl. Prereq: Permission of instructor.

680 Radiation Biology U P G 2
Effect of ionizing radiation in biological systems at the molecular, cellular, organ, and community levels with special emphasis on medical implications and radiation safety. Wi Qtr. 2 cl. Prereq: Permission of instructor.

740 Clinical Radiology P G 5
Analysis of various radiographic examinations and the opportunity to make presentations. Su, Au, Wi, Sp, Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.
A— Radiologic Diagnosis
B— Radiation Therapy

750 Radiologic Anatomy G 2
Anatomy of specific regions or areas as it applies to the interpretation and understanding of diagnostic images. Hines.
Sp Qtr. Arr. Prereq: Satisfactory completion of Med Coll 662, or Anatomy 712 or equiv and permission of instructor. Repeatable to a maximum of 8 cr hrs. Cross-listed with Cell Biology, Neurobiology and Anatomy 750.

793 Individual Studies
Prereq: Permission of instructor. Repeatable to a maximum of 24 cr hrs. These courses are graded S/U.

793.02 General U P G 1-6
793.10 Radiation Biology U P G 3-6

813* Magnetic Resonance Spectroscopy and Imaging I G 3
Presentation of the basic principles of MRS/MRS, including basic MR physics, pulse sequences, adiabatic excitation, coil design, MR hardware, image formation, localized spectroscopy. Wi Qtr. 2 1/2-hr cl. Prereq: Chem 521 or equiv, Biochem 511 or equiv, grad standing, and permission of instructor. Cross-listed in Biomedical Engineering.

814* Magnetic Resonance Spectroscopy and Imaging II G 3
Presentation of the basic principles of MRS/MRS including basic MR physics, pulse sequences, adiabatic excitation coil design, MR hardware, image formation, localized spectroscopy. Sp Qtr. 2 1 1/2-hr cl. Prereq: 813, grad standing, permission of instructor. Cross-listed in Biomedical Engineering.

830* Molecular Basis of Mutagenesis and Carcinogenesis G 3
Nature and mechanism of carcinogen-DNA interaction; cellular processing of genomic alterations and role of genotoxin-induced preneumagenic/preneoplastic lesions in neoplasia. Sp Qtr. 2 cl. Prereq: Biochem 613, 614, 615 sequence or MBiochem 827 or Pharmacy 877 or permission of instructor, and grad standing.

850 Seminar G 1
Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs in any combination of decimal subdivisions. These courses are graded S/U.

850.09 Radiation Oncology
Selected topics of particular current interests in both research and applications of ionizing radiation in the treatment of cancer.

850.10 Radiobiology
Introduction to state of the art developments and innovations resulting from research directed at the study of cellular-molecular-environmental interactions.

850.20 Physics of Imaging
Selected topics of current interests in research, development, and technology in medical physics as applied to medical imaging.

Religious Studies
S306 Dulles Hall, 230 West 17th Avenue, 292-2559

270 Introduction to Comparative Religion U 5
Introduction to the academic study of religion through comparison among major traditions (Judaism, Christianity, Islam, Hinduism, Buddhism, etc.) and smaller communities. H270 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: English 110 or 111 or equiv. Not open to students with credit for Comp Std 270. Cross-listed in Comparative Studies in the Humanities. GEC arts and hums cultures and ideas course.

321 The Religions of India U 5
History and structure of South Asian religions with attention to myth, ritual, art, philosophy, and social stratification.

322 Native American Religions U 5
Comparative survey of indigenous religions of North, Middle, and South America; and patterns and diversity in religious experience, cosmologies, myths, rituals, social organizations, and sacred roles.

323 The Buddhist Tradition U 5
History and structure of Buddhism from founding to present in South, Southeast, and East Asia; emphasis on rituals, beliefs, and local and regional variations.

324 African Religions U 5
Survey of African traditional religions and their interaction with Islam and Christianity in Africa and the diaspora; emphasis on cosmologies, myths, ritual, ethics, and witchcraft.

376 The Jewish Mystical Tradition U 5
The history of Jewish mysticism from antiquity to the present, with emphasis on its implications for the comparative study of religious experience.

Sociology of Religion
See Sociol 467.

620 Approaches to the Study of Religion U G 5
Survey and comparison of concepts, categories, theories, and methods used by various disciplines in the study of religion.

641 The Japanese Religious Tradition U G 5
A survey of the Japanese tradition, including Shinto, Buddhism, Taoism, New-Confucianism, and folk religion from the 8th century B.C.E. to the present.

Special Topics in Cultural Anthropology: Anthropology of Religion
See Anthrop 620.11.
332 Religious Studies

651 Topics in Religious Studies U G 5
Critical study of selected themes and topics in religious studies; emphasis on comparative study of myth, ritual, religious experience, proxies, history, art, etc.
2 2-hr cl, Prereq: 270 or Comp Std 270 or grad standing or permission of instructor. Repeatable to a maximum of 15 cr hr.

593 Individual Studies U G 1-5
Students may register for individual directed study in areas not covered in regular course work.
Au, Wi, Sp Qtrs. Arr, Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hr. This course is graded S/U.

694 Group Studies U G 3-5
Groups of students are given an opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 15 cr hr.

7783 Honors Research U 3-5
A program of reading arranged for each student, with individual conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. Arr, Prereq: 4th yr standing; a grade of A in at least half the major courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed. Open only to candidates with distinction in rel stds. Repeatable to a maximum of 10 cr hr.

Respiratory Therapy
School of Allied Medical Professions
431 School of Allied Medical Professions Building, 1583 Perry Street, 292-2445

320 Components of Respiratory Health U 4
Survey of normal respiratory mechanisms with specific consideration for the basis of respiratory therapeutics, the respirable environment and the role of the therapist.
Au Qtr, 2-2-hr cl, Prereq: Admission to the Resp Ther Division or permission of instructor.

400 Basic Respiratory Care U 6
Study of theories, procedures, and equipment utilized in delivering, monitoring, and evaluating basic respiratory therapeutics to patients with compromised respiratory function in the hospital setting.
Au Qtr, 2 2-hr cl, 2 3-hr lbs. Prereq: Admission to Resp Ther Division.

410 Introduction to Clinical Respiratory Care U 4
An introduction to basic respiratory assessment and life support techniques, infection control, the medical record, and the clinical environment.
Au Qtr, 1 2-hr cl, 1 3-hr lab, 1 3-hr clinical. Prereq: Admission to Resp Ther Division. Not open to students with credit for 489.01.

420 Pulmonary Rehabilitation and Continuing Care U 3
Theories, procedures, equipment, standards, organizations, and legislation applicable to the delivery of respiratory therapeutics in non-hospital settings.
Wi Qtr 1 2-hr cl, 1 2-hr lab. Prereq 400.

430 Pulmonary Function Testing U 3
Study of theories, procedures, standards, and interpretations of pulmonary function tests with consideration of mechanical and electronic principles of testing equipment.
Au Qtr, 1 2-hr cl, 1 3-hr lab. Prereq or concur: 320. Not open to students with credit for 460.

450 Arterial Blood Gas Analysis U 3
A study of the methods and procedures for obtaining arterial blood, the principles and standards of analysis, and application of the physiologic data.
Wi Qtr, 1 2-hr cl, 1 2-hr lab. Prereq: 320, 430. Not open to students with credit for 460.

475 Mechanical Ventilation U 4
Major emphasis is placed on all aspects of the management of the patient-ventilator system and artificial airways.
Wi Qtr, 2 2-hr cl. Prereq: 400, 410, 430; concur: 476. Not open to students with credit for 440 and 470.

478 Mechanical Ventilators and Artificial Airways U 3
Lectures, demonstrations, and laboratories on the various mechanical ventilators and artificial airways in use.
Wi Qtr, 1 2-hr cl, 1 3-hr lab. Prereq: 400, 410, 430; concur: 475

480 Respiratory Disease U 2
A study of the etiologies, manifestations, and treatment of respiratory diseases and their clinical courses.
Wi Qtr, 1 2-hr cl. Prereq: 320, 400, 430.

489 Clinical Experience
Su, Au, Wi, Sp Qtrs. Arr, Prereq: Admission to the Resp Ther Division. Repeatable to a maximum of 20 cr hr. Off-Campus field experience required.

489.20 Clinical Experience: Phase I U 3
Clinical application of basic respiratory therapeutics and non-invasive cardiopulmonary function testing.
Wi Qtr, 1 2-hr cl, Prereq: 320 and 400 and 410 and 430. Not open to students with credit for 489.02 or 489.05.

489.30 Clinical Experience: Phase II U 3
Clinical application of intensive respiratory care; evaluation of pulmonary function with emphasis on arterial blood gas analysis.
Sp Qtr, 1 2-hr cl, Prereq: 450 and 475 and 476 and 489.20. Not open to students with credit for 489.04 or 489.10.

489.40 Clinical Experience: Phase III U 9
Clinical application of adult, neonatal, and pediatric intensive respiratory care; home, continuing, and subacute respiratory care with emphasis on pulmonary rehabilitation.
Su Qtr, 2 2-hr cl, Prereq: 489.30 and 500 and 515. Not open to students with credit for 489.06 or 489.07 or 489.08.

489.50 Clinical Experience: Phase IV U 2
Clinical application of patient evaluations, developing respiratory care plans and implementing clinical protocols, providing intensive respiratory care, multi-skill training, assisting physicians with special procedures.
Au Qtr 8 hrs arr, Prereq: 489.40. Not open to students with credit for 489.04.

500 Neonatal and Pediatric Respiratory Therapy U 5
Neonatal and pediatric pulmonary pathophysiology with consideration of the necessary adaptations of equipment and therapeutics for application to the pediatric patient.
Sp Qtr, 2 2-hr cl, 1 2-hr lab. Prereq: 475 and 476.

515 Intensive Respiratory Care U 5
Etiology, manifestations, and treatment of respiratory failure, including principles, techniques, and equipment associated with advanced cardiopulmonary monitoring and cardiac life support.
Sp Qtr, 2 2-hr cl, 1 2-hr lab. Prereq: 475, 476, and 480. Not open to students with credit for 490 and 510.

520 Administration of Respiratory Therapy Services U 3
An analysis of management processes utilized by respiratory therapy services including organization, communication, quality assurance, audit, budget and regulatory processes, personnel management, and educational functions.
Au Qtr, Prereq or concur: All Med 630.

589 Advanced Clinical Practice U 1-5
Supervised clinical education and experiences in respiratory therapy education, administration of respiratory services, and areas of advanced professional practice.
Su, Au, Wi, Sp Qtrs. 8 hrs/wk, 1 hr/hr. Prereq: Written permission of instructor and satisfactory completion of all therapy professional courses. Repeatable to a maximum of 10 cr hr. This course is graded S/U.

593 Individual Studies in Respiratory Therapy U 1-5
Guided study of topics or pursuit of individual experiences in respiratory therapy.
Su, Au, Wi, Sp Qtrs. Prereq: Admission to the Respiratory Therapy Division or permission of instructor. Repeatable to a maximum of 10 cr hr. This course is graded S/U.

595 Seminar U 1-5
Conferences, group discussions, and presentations of selected topics.
Su, Au, Wi, Sp Qtrs. Arr, Prereq: Admission to Respiratory Therapy or permission of instructor. Repeatable to a maximum of 9 cr hr. This course is graded S/U.

600 Fundamentals of Respiratory Care Research U 3
Survey of research problems, methods, and designs utilized in respiratory care, with emphasis on data presentation and analysis.
Au Qtr, 2 2-hr cl. Prereq: Psych 220, or Stat 35 or 145 or equiv, and 4th yr or grad standing.
235 Introduction to Romanian Culture U 5
Romanian literature in its cultural context, survey of the relationship of
literature, art, cultural traditions from the beginnings to the present.
Wi Qtr. 5 cl. Taught in English. GEC arts and hums cultures and ideas
course.

293 Individual Studies U 1-15
Individual studies in Romanian.
Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of
15 cr hrs. This course is graded S/U.

294 Group Studies U 1-15
Group studies in Romanian language, literature, and culture.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept. Repeatable to a maximum of
15 cr hrs.

405 Conversation and Composition I U 5
Drill in everyday patterns of conversation and elementary practice in
writing.
Au Qtr. 5 cl. Preq: 104 or 111 or permission of instructor. Not open to
students with credit for 293 taken Au Qtr 1982 or Wi Qtr 1983.

407 Conversation and Composition II U 5
Review of Romanian grammar; written compositions; perfection of
pronunciation, translation practice, and expansion of vocabulary.
Wi Qtr. 5 cl. Preq: 405 or permission of instructor. Not open to students
with credit for 293 Au Qtr 1982 or Wi Qtr 1983.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive
Ohio State credit for that work.
Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees
and any fees in excess of Ohio State tuition, as well as all travel and
subsistence costs.

Rural Sociology

208 Agricultural Administration Building, 2120 Fyffe Road, 292-6321

101 Introduction to Rural Sociology U 5
Principles of society, major social institutions, and social change;
emphasizes social changes in rural life, rural organizations, population,
and family living. Lobao, Donnermeyer and Thomas.
Su, Au, Wi, Sp Qtrs. 5 cl. Not open to students with credit for Social 101 or
201. This course is available for EM credit. BER/GEC/LAR course. SS
Admin Cond course.

378 Social Groups in Developing Societies U 5
Discussion of different life experiences, statuses, and behavior of people
in major social groupings in developing societies. Raskowski.
Sp Qtr. 2 2-hr cl. Preq: 5 cr hrs in rural soc, social, or related social
science, or permission of instructor. BER/GEC/LAR course.

489 Internship in Rural Sociology U 3-5
Supervised experience with an approved firm or organization; written
comprehensive report required.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of major adviser. Repeatable
to a maximum of 10 cr hrs. Open only to dept majors.

562 Diffusion of Information on Agricultural
Technology U G 3
The process by which new ideas diffuse to farmers, homesteaders, and
peasants; emphasis on group influence, change agents, green revolution,
and intermediate technology. Donnermeyer and Lobao.
Au Qtr. 3 cl. Not open to students with credit for 421.

622 Amish Society U G 5
Analysis of the historical, social, religious, economic and cultural dimensions
of the Amish. Donnermeyer
Wi Qtr. 2 2-hr cl. Preq: 10 cr hrs in rural soc, social, or related social
ciences, or permission of instructor.

642 Concepts and Theories in Rural Sociology U G 5
A comparative analysis of rural-urban social systems; analysis of the
decline of rural-urban differences and the development of interdependency
among rural-urban subsystems. Lobao.
Sp Qtr. 2 2-hr cl. Preq: 15 cr hrs in rural soc and/or social at the 300-level
or higher. Not open to students with credit for 600.

666 Rural Poverty U G 5
Evaluation of the factors which tend to create and perpetuate social and
economic deprivation; the socio-economic conditions of poverty subgroups
are analyzed in depth. Lobao.
Au Qtr. 2 2-hr cl. Preq: 15 cr hrs in rural soc or related social science.
Women's role in rural society from a comparative perspective, focusing on agriculture, rural industry, and household activities, both in developing and developed countries. Lab. 

Sp Qtr. 2:3 hr cl. Prereq: 15 cr hrs in rur soc, sociol, or related social science, or permission of instructor.

H683 Honors Project U 1-10 Conducting and reporting an honors project. 
Su, Au, Wi, Sp Qtrs. Prereq: Agr Int H590.01, enrollment in Honors Program, and permission of honors project supervisor. Repeatable to a maximum of 10 cr hrs as H683 or in combination with 680, 693, H698, 693, or H693. This course is graded S/U.

688* Social Impact Assessment of Domestic Development U G 5 Discussion of concepts and methods associated with social impact assessment of planned change programs; primary emphasis will be placed upon public development programs. 
Au Qtr. 1:3 hr-cl. Students will be required to use 2 hrs/week on a special class project. Prereq: 15 cr hrs in rur soc or sociology courses numbered 300 and above or related social sciences.

693 Individual Studies U G 2-5 Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative p/t-ratio and written permission of instructor. Repeatable to a maximum of 15 cr hrs in any or a combination of decimal subdivisions. These courses are graded S/U.

693.01 Rural Social Problems 
693.02 Rural Formal Organizations 
693.03 Rural Sociology in Foreign Areas 
693.04 Research Methods in Rural Sociology 
693.05 Rural Community and Institutions 
693.06 Community Development 
693.07 Diffusion of Technology 
693.08 General Rural Sociology

694 Group Studies U G 2-5 An intensive study of a selected area in rural sociology appropriate to the needs of the group not provided in other courses. 
Su, Au, Wi, Sp Qtrs. Prereq: permission of instructor. Repeatable to a maximum of 8 cr hrs.

697 Study at a Foreign Institution U G 1-15 An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. 
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 25 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

744* Rural Sociology Demography U G 5 Application of demographic principles to rural communities, rural institutions, and rural social problems with emphasis on population change and migration. 
Thomas 
Sp Qtr. 2:2 hr cl. Prereq: 15 cr hrs in rur soc or sociol or related social sciences. Not open to students with credit for 769.01.

766* Environmental Sociology U G 5 Exploration of sociological approaches to the study of society and its physical environment and analysis of major issues relating to the survival base of human societies. 
Napier 
Wi Qtr. 2:2 hr cl. Prereq: 15 cr hrs in rur soc and/or sociol at 400 level or above.

786* Sociological Theory Applied to Domestic Development U G 5 Application of general sociological theories and development research findings to the analysis of domestic rural development; emphasis upon consensus and conflict models. Donnermeyer. 
Sp Qtr. 1:3 hr-cl. Prereq: 15 hr in rur soc or sociol or related social science. Not open to students with credit for 796.06.

792 Rural Sociology of Developing Societies U G 5 Overview of sociological principles, theories, and practice applied to international and social change in rural settings. Kakoski. 
Wi Qtr. 2:2/hr-cl. Prereq: 15 hr in sociology, rural soc, related sociol or, international studies courses; or permission of instructor. Not open to students with credit for 682.

888 Social Action in Community Development G 5 An analysis of the steps and conceptual areas in the social action process and its application to rural community development. Napier.

Sp Qtr. Arr.

999 Research G Arr Research for thesis and dissertation purposes only. 
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Russian

232 Cunz Hall, 1841 Milikin Road, 292-6733 See also Slavic Languages and Literatures.

101 Elementary Russian I Development of oral and written language skills. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. Fl, Admis Cond courses.

101.01 Classroom Track U 5 
Su, Au, Wi, Sp Qtrs. 5 cl. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

101.51 Individualized Track U 1-5 
Su, Au, Wi, Sp Qtrs. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 101.05.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

102 Elementary Russian II Development of oral and written language skills. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. Fl, Admis Cond courses.

102.01 Classroom Track U 5 
Au, Wi, Sp Qtrs. 5 cl. Prereq: 101.01 or 5 cr hrs in 101.05 or 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.51 Individualized Track U 1-5 
Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 101.01 or 5 cr hrs of 101.05 and 101.51 or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the quarter may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 102.05.

E—Designates a version covering the same material and satisfying the same University and college requirements but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

103 Intermediate Russian I Readings, oral and written practice, grammar review. Students may select from among the following subdivisions which emphasize special areas. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

103.01 Classroom Track U 5 
Au, Wi, Sp Qtrs. 5 cl. Prereq: 101.01 or 5 cr hrs in 102.06 or 102.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

103.51 Individualized Track U 1-5 
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: Grade of B- or above in 102.01 or 5 cr hrs of 102.05 or 102.51 or permission of instructor. Students may register for 102.51 and 103.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs for 103.05.

E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

104 Intermediate Russian II Readings, oral and written practice, grammar review. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.

104.01 Basic U 5 Balanced use of the four basic skills: reading, oral comprehension, speaking, and writing; emphasis on Russian literary texts. 
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103.01 or 5 cr hrs of 103.05 or 103.51. Not open to students with credit for 104. This course is available for EM credit.
104.51 Individualized Track U 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Grade of B- or above in 103.01 or 5 or hrs of 103.05 or 103.51 or permission of instructor. Students may register for 103.51 and 104.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 or hrs during the qtr. Progress is sequential from one cr/hr to the next, with proficiency at the level of 80% required for advancement. Not open to students with 5 cr hrs of 104.05.
E—Designate a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

110 Intensive Elementary Russian U 5 or 10
An intensive course combining the content of 101.01 and 102.01.
Wi Qtr. 5 cr/hr. Not open to students with credit for 102, 102 decimal subdivisions, or 112; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 101 or any cr hrs of 101 decimal subdivisions may not register for more than 5 cr hrs. Equiv of first and second courses of the foreign language sequence; successful completion of 110-103-104 or 110-111 fulfills the ASC foreign language requirement. GEC for lang course.

111 Intensive Intermediate Russian U 5 or 10
An intensive course combining the content of 103.01 and 104.01.
Sp Qtr. 5 cr/hr. Prereq: 102. Not open to students with credit for 104 or 104 decimal subdivisions; or to native speakers of this language through regular course enrollment or EM credit. Equiv to third and fourth courses of the foreign language sequence; successful completion of 101-102-111 fulfills the Arts and Sciences foreign language requirement. Students with credit for 103, any hrs of 103 decimal subdivisions, or 112 may not register for more than 5 cr hrs. GEC for lang course.

135 Introduction to Russian Culture U 5
Russian literature in its cultural context, survey of the relationship of literature, art, music, and drama from the beginnings to the present.
Su, Au, Wi, Sp Qtrs. 4 d, 1 hr arr. Taught in English. GEC arts and humanities cultures and ideas course.

250 Masterpieces of Russian Literature in Translation U 5
Reading and analysis of works by the great masters, Turgenev, Dostoevsky, and Tolstoy, and the Nobel Prize winners, Bunin, Sholokhov, Pasternak, and Solzhenitsyn.
Au, Wi, Sp Qtrs. 5 cr. Not open to students with credit for 220 or 221. Taught in English. GEC arts and humanities literature course.

405 Russian Conversation and Composition
Drill in everyday patterns of conversation and elementary practice in writing.
405.01 Classroom Track U 5
Au, Wi, Sp Qtrs. 5 cr. Prereq: 104 or permission of instructor. Not open to students with credit for 405; or to native speakers of this language through regular course enrollment or EM credit. Students must register for and complete 5 cr hrs during the qtr.
405.51 Individualized Track U 1-5
Au, Wi, Sp Qtrs. Prereq: 104.01 or 104.51 or permission of instructor. Not open to students with credit for 405 or 405.01; or to native speakers of this language through regular course enrollment or EM credit. Students may register for 104.51 and 405.51 concurrently with permission of instructor. Students register for and complete from 1 to 5 or hrs during the qtr. Students who complete five credit hours during the crq of the qtr may proceed to 407. Progress is sequential from one credit hour to the next, with proficiency at the level of 80% required for advancement. E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

407 Intermediate Russian Conversation and Composition
407.01 Classroom Track U 5
Au, Wi, Sp Qtrs. 5 cr. Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Not open to students with credit for 405; or to native speakers of this language through regular course enrollment or EM credit. Students must register for and complete 5 cr hrs during the qtr.
407.51 Individualized Track U 1-5
Au, Wi, Sp Qtrs. Prereq: 405.01 or 5 cr hrs of 405.51 or permission of instructor. Not open to students with credit for 407 or 407.01; or to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 or hrs during the qtr. Progress is sequential from one credit hour to the next, with proficiency at the level of 80% required for advancement. Not open to students with credit for 407 or 407.01. Students may register for 405.51 and 407.51 concurrently with permission of instructor. E—Designates a version covering the same material and satisfying the same University and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.

511 Language Maintenance Course U 2
Intended for the non-major and non-minor desiring to maintain an active knowledge of Russian without enrolling in advanced courses in grammar, literature or linguistics. Intermediate level conversation and non-literary popular readings.
2 cr. Prereq: 407, 407.01 or 407.51 or permission of instructor. Repeatable to a maximum of 12 hrs. Credit does not count for the major or minor. This course is graded S/J.

512 Practical Russian Conversation U G 3
Contemporary Soviet conversational patterns; preparation for program at the Pushkin Institute in Moscow.
Sp Qtr. 3 cr. Prereq: 30 hrs of Russian or permission of instructor. Not open to students with credit for 695, 698, 895, or 995. The instructor will be a visiting professor from the Pushkin Russian Language Institute in Moscow, Russia.

514 Camp Horizon (Lagern' Gorizont) U G 1
A weekend total immersion Russian language camp; Russian only spoken; lectures, discussions, films, singing, dancing.
Sp Qtr. Friday 6 pm-Sunday 2 pm. Prereq: 560 or equiv, or permission of instructor. Repeatable to a maximum of 4 cr hrs, including or hrs earned in 214. Travel and subsistence costs will be borne by the student. This course is graded S/J.

520 Russian Literature in English Translation: From Pushkin to Turgenev U G 5
An introduction to the Russian novel, drama, and poetry; major contributions of Pushkin, Lermontov, Gogol, Ostrovsky, Goncharov, and Turgenev.
Au, Qtr. 4 cr. Not open to students with credit for 220.

521 Russian Literature in English Translation: From Dostoevsky to Chekhov U G 5
Reading and analysis of works by Dostoevsky, Tolstoy, Saltykov-Shchedrin, Turgenev, Chekhov.
Wi Qtr. 4 cr. Not open to students with credit for 221.

522 Russian Literature in English Translation: 20th-Century Literature, 1900-1928 U G 5
Survey of Russian literature, 1900-1928.
Au, Wi, Sp Qtrs. 3 cr. Not open to students with credit for 222.

523 Russian Literature in English Translation: 20th-Century Literature, 1928-2000 U G 5
Au, Wi, Sp Qtrs. 3 cr.

560 Contemporary Russian in Cultural and Literary Contexts I U G 5
An intermediate Russian language course designed to improve the student's ability to communicate accurately and effectively in spoken and written Russian.
Au Qtr. 3 1/2 hr cr. Prereq: 407 or permission of instructor.

561 Contemporary Russian in Cultural and Literary Contexts II U G 5
An intermediate Russian language course designed to improve the student's ability to communicate accurately and effectively in spoken and written Russian.
Wi Qtr. 3 1/2 hr cr. Prereq: 560 or permission of instructor.

562 Current Events through Russian Media U G 5
An introduction to the Russian mass media with an emphasis on current events; focuses on developing skills for approaching written and oral native Russian texts.
Sp Qtrs. 3 1/2 hr cr. Prereq: 561 or permission of instructor.

571 Basic Russian for Graduate Students G 5
Basic elements of Russian grammar.
5 cr. Prereq: Grad standing. Credit does not apply to the minimum hours required for the master's or doctoral degrees.

572 Russian for Research I U G 3
3 cr. Prereq: Grade of C or above in 571 or equiv. Credit does not apply to the minimum hours required for the master's or doctoral degrees. Repeatable twice. Satisfactory completion of this course (grade A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of PhD language requirement. No audit.

573 Russian for Research II U G 3
Reading of difficult material at a reasonable rate of speed and with only infrequent use of dictionaries.
3 cr. Prereq: Grade of A or B in 572 or equiv preparation demonstrated by a placement test and permission of instructor. Open only to grad students. Repeatable to a maximum of 6 cr hrs. Completion of this course with a grade of A or B may be accepted by the student's dept as evidence of a thorough reading knowledge of Russian. Credit does not apply to minimum hrs required for the master's or PhD degree. No audit.
580 Reading Russian I
Readings from a variety of sources with special emphasis on contemporary materials.
Prereq: 407.01 or 5 cr hrs in 407.51 or 573. Not open to students with credit for 510.
580.01 Classroom Track U G 3
Sp Qtr: 3 cl.
580.51 Individualized Track U G 1-3
Strategies for reading Russian expository prose; skimming, scanning, reading for complete comprehension, and critical reading. Authentic texts from contemporary journalistic prose.
Su, Au, Wi, Sp Qtrns. Students may register for 407.51 and 580.51 concurrently. Students register for and complete from 1 to 3 cl hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 581.51. Progress is sequential from one cr hr to the next, with a proficiency at the level of 80% required for advancement. E—Designates a version covering the same material and satisfying the same UG and college requirements, but with instructor assistance and oral testing over the telephone. Not open to currently enrolled Columbus campus students. Registration is through CED.
581 Reading Russian II
581.51 Individualized Track U G 1-3
Continuation of 580; further development of strategies for reading Russian expository prose; authentic texts from contemporary journalistic prose.
Su, Au, Wi, Sp Qtrns. Students may register for 407.51 and 580.51 concurrently. Students register for and complete from 1 to 3 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.
582 Reading Russian III
582.51 Individualized Track U G 1-3
Continuation of 581.51; further development of strategies for reading Russian expository prose; authentic texts from contemporary journalistic prose.
Su, Au, Wi, Sp Qtrns. Students may register for 407.51 and 580.51 concurrently. Students register for and complete from 1 to 3 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.
609 Advanced Reading, Conversation, and Composition I U G 4
Reading of contemporary prose and verse, presentation of oral and written reports, drill in intonation patterns, translation from English into Russian.
Au Qtr: 3 cl, 2 hr arr. Prereq: 561 or permission of instructor.
610 Advanced Reading, Conversation, and Composition II U G 4
Wi Qtr: 3 cl, 2 hr arr. Prereq: 609 or permission of instructor.
6171* Business Russian U G 5
Simulated trade negotiations with the Soviets providing sufficient terminology to facilitate bi-lingual trade negotiations.
Sp Qtr: 3 cl. Prereq: 30 cr hrs of Russian or permission of instructor.
631 Introduction to Russian Linguistics U G 3
An introduction to linguistic concepts useful in the study of Russian; survey of major figures in Russian historical and descriptive linguistics.
3 cl. Prereq: 30 cr hrs in Russian.
635* Practical Russian Pronunciation U G 5
Lectures and practical exercises, use of phonetic symbols, corrective exercises, and problems of teaching pronunciation.
3 cl, 2 lab hrs. Prereq: 30 cr hrs in Russian.
640 Introduction to the Structure of Russian U G 5
Elements of Russian pronunciation and grammar with comparisons to English.
3 cl. Prereq: 631.
6441* Russian Folklore U G 5
From the beginning to present; proverbs, the oral epic, historical songs, folktales, the folk theatre; analysis of the folklore component in modern Russian literature.
3 cl. Not open to students with credit for 834. Taught in English.
650* Dostoevsky U G 5
Critical analysis of the major novels and shorter works; intellectual and literary development of Dostoevsky.
3 cl. Prereq: 831. Permission of instructor required of undergrad non-majors. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list. Not open to students with credit for 753.
6511* Tolstoy U G 5
Analysis of all major works including the novels, plays, stories, and important polemical works.
3 cl. Prereq: Permission of instructor required of undergrad non-majors. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list. Not open to students with credit for 754.
6531* Russian Drama U G 5
Emphasis on the period from 1850 to present day; Ostrovsky, Chekhov, Gorky, Andreyev, Blok, and Soviet writers Leonov and Kafka.
Sp Qtr: 3 cl. Prereq: 10 cr hrs in Russian or other literature courses at the 200 level or above. Given in English but undergrad majors in Slavic will do prescribed portions of the reading in the original; grad students in Slavic must read in the original items starred on the departmental MA reading list.
656 Russian Women Writers U G 5
The contributions of women writers to Russian literature and culture in the 19th and 20th centuries; emphasis on the contestation and transformation of gender roles.
2-2 hr cl.
660 Basic Approaches to the Study of Russian Literature U G 3
Historical overview of Russian literary criticism and theory; basic practical approaches to the study of literary texts.
3 cl. Prereq: Grad standing in dept or 25 hrs of Russian literature, or permission of instructor.
661 The Poetics of Russian Verse U G 4
Presentation of the basic distinctive features of Russian verse and a theoretical historical survey of the main trends and authors in Russian poetry.
3 cl. Prereq: 660 or permission of instructor.
662 The Poetics of Russian Prose U G 4
Stylistic, thematic, and structural study of Russian prose as a developing genre in the 19th and 20th centuries.
3 cl. Prereq: 660 or permission of instructor.
6641* Studies in 20th-Century Russian Literature U G 5
Offerings will include such topics as: the Serapion Brothers, literature and the revolution, prose of the 1920's emigre literature.
3 cl. Prereq: 10 cr hrs in Russian or other literature at the 200 level or above. Repeatable to a maximum of 20 cr hrs. Given in English; some original reading required of Slavic undergrad and grad majors.
675 Writing Seminar on Topics of Russian Literature, Language, and Life U 5
Junior-senior seminar explores issues of Russian language and literature, focusing on reading in Russian and on honing English oral and writing skills.
Sp Qtr: 2-2 hr cl. Prereq: GER 3rd writing course; jr or sr standing; or permission of instructor. Not open to grad students in Slavic. Repeatable to a maximum of 15 cr hrs.
693 Individual Studies U G 2-10
Su, Au, Wi, Sp Qtrns. Prereq: Permission of dept chairperson. Repeatable to a maximum of 30 cr hrs including cr hrs in 693.01 through 693.08 in any combination of decimal subdivisions. These courses are graded SU.
693.20 Literature
693.30 Linguistics
693.40 Language
693.50 Unspecified
694 Group Studies U G 2-10
Su, Au, Wi, Sp Qtrns. Prereq: Permission of dept chairperson. Repeatable to a maximum of 15 cr hrs.
695 Quarter or Semester at the Pushkin Russian Language Institute in Moscow U G 5, 15, or 18
Formal language instruction 30 hrs per week by faculty of the Institute; in Moscow only Russian will be spoken.
Au, Sp Qtrns. Prereq: Minimum of 30 cr hrs in Russian or equiv and permission of the chairperson. Repeatable to a maximum of 46 cr hrs including 695. Travel and subsistence costs for the institute will be borne by the student.
711 Advanced Russian Linguistic Stylistics U G 5
Advanced study of Russian morphological, syntactic and semantic features and their stylistic function in a literary text.
2-2 hr cl. Prereq: 610 or permission of instructor. Repeatable to a maximum of 10 cr hrs.
720 History of the Russian Language U G 5
Survey of phonetic, morphological, and syntactic changes in Russian from prehistoric to the present.
Au, Wi, Sp Qtrns. 2-2 hr cl. Not open to students with credit for 820.

723 Topics in Russian Poetry U G 5
Topics vary: the history of Russian poetry, versification theory; literary schools such as symbolism, formalism, or futurism; study of individual poets from any period.
3 cl. Prereq: 610 or permission of instructor. Repeatable to a maximum of 20 cr hrs. Conducted in Russian.

750 Pushkin and his Time G 5
Analysis of Eugene Onegin as poetry and an encyclopedia of the times; social, political, and cultural trends in the 1820s and 1830s; romantic poets.
3 cl. Prereq: 10 hrs of Russian literature at the 200 level or above or permission of instructor. Not open to students with credit for 840.

7511 Gogol and 19th-Century Russian Satire U G 5
Satire in the works of Nikolay Gogol, Nikolai Leskov, and Mikhail Saltykov-Shchedrin studied in the context of Russian literary and social development.
Prereq: 10 hrs in Russian or other literature in courses at the 200 level or above, or permission of instructor.

7521 Turgeniev, Chekhov, and Aspects of Russian Realism U G 5
Study of Russian prose works outside of the satirical genre and others than the prose of Dostoevsky and Tolstoy.
Prereq: 10 hrs or Russian or other literature in courses at the 200 level or above, or permission of instructor.

7754 Contemporary 20th-Century Russian Literature G 5
Russian literature of the 1960s through the present.
Au, Wi, Sp Qtrns. 2-2 hr cl. Prereq: Grad standing and good reading ability in Russian; or permission of instructor.

801 College Teaching of Russian I G 3
Methods and techniques for teaching Russian at the college level, selection and preparation of teaching and testing materials, the language laboratory, and other aids.
Au Qtr. 3 cl, 2 lab hrs. Prereq: 611 or equiv, or permission of instructor.

8231 Development of the Russian Literary Language G 5
The formation of Russian as a literary language; the role of Church Slavonic elements in its formation and Western influences on Russian.
3 cl. Prereq: 820 or permission of instructor.

8261 Topics in the Structure of Russian G 5
Analysis and description of the structure of contemporary standard Russian.
Au Qtr. 3 cl. Prereq: 649 or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

827 Topics in the History of Russian G 5
Development of Russian from Common Slav to contemporary standard Russian with consideration of its place within East Slavic.
3 cl. Prereq: 820 or equiv with written permission of instructor. Repeatable to a maximum of 15 cr hrs.

8291 Old Russian Literature: 15th-17th Century G 5
Study of literary works of various genres cultivated in this period.
3 cl. Prereq: 611 or 615.

831 Russian Literature, 1650-1800 G 5
The baroque period, classicism, and sentimentalism; emphasis on the classical period of the 18th century.
3 cl. Prereq: 2nd yr grad standing or permission of instructor.

851 Seminar in Russian Literature, 1820-1917 G 3-5
2 cl. Repeatable to a maximum of 15 cr hrs.

852 Seminar in Russian Literature since 1917 G 3-5
2 cl. Repeatable to a maximum of 15 cr hrs.

895 Quarter or Semester at the Pushkin Russian Language Institute in Moscow G 5, 15, or 18
Formal language instruction 30 hrs per week by faculty of the Institute; in the USSR Only Russian will be spoken.
Au, Sp Qtrns. Prereq: 695 or 698 or minimum of 50 cr hrs in Russian or equiv and permission of chairperson. Repeatable to a maximum of 46 cr hrs including 695 and 698. Travel and subsistence costs for the institute will be borne by the student.

993 Individual Studies G 2-10
Su, Au, Wi, Sp Qtrns. Prereq: Permission of dept chairperson. Repeatable to a maximum of 40 cr hrs in any combination of decimal subdivisions. These courses are graded S/U.

993.20 Literature
993.30 Linguistics
993.40 Language
993.50 Unspecified

995 Pushkin Language Institute, Moscow G 18
Ten month program in language, methodology, civilization, culture, contemporary Soviet literature.
Prereq: 695 or 698 or 895 or equiv and permission of chairperson. Must be a grad student in Russian at time of application. Instruction 30-36 hrs per week by institute faculty; in Moscow only Russian will be spoken; students must enroll in all three decimal subdivisions. Travel and subsistence costs for the institute will be borne by the student.

995.01 Part 1
Au Qtr.

995.02 Part 2
Wi Qtr.

995.03 Part 3
Sp Qtr.

Sanskrit

222 Oxley Hall, 1712 Neil Avenue, 292-4052
See also Linguistics.

621 Elementary Sanskrit U G 5
Introduction to Indo-European, Indic, and Sanskrit; reading of introductory texts.
Not open to students with credit for Linguist 621.

6212 Classical Sanskrit U G 5
Reading of classical Sanskrit texts.
Prereq: 621 or permission of instructor. Not open to students with credit for Linguist 622.

Scandinavian

314 Cunz Hall, 1841 Millikin Road, 292-6985

222 Nordic Mythology and Medieval Culture U G 5
The myths and gods of northern Europe and the culture which produced them within a modern social and psychological context.
Au Qtr. 5 cl. Taught in English. GEC arts and hums lit course.

500 Masterpieces of Scandinavian Literature U G 5
Selected masterpieces of Scandinavian literature in European cultural context.
Sp Qtr. 5 cl. Taught in English.

520 The Films of Ingmar Bergman U G 5
Major works of Sweden's foremost director; stress on film as a creative expression of the development of modern aesthetic and philosophical concerns.
Sp Qtr. 2 cl, 1 3-hr cl. Taught in English. GEC a/t's and hums VPA course.

5711 Reading the Scandinavian Languages U G 5
Fundamentals of grammar of the Scandinavian languages for research purposes in the humanities, sciences, and social and behavioral sciences.
Wi Qtr. 5 cl.

693 Individual Studies U G 2-5
Investigation of problems in the various fields of Scandinavian literature and philology.
Au, Wi, Sp Qtrns. Arr. Prereq: Permission of chairperson. Repeatable to a maximum of 25 cr hrs. This course is graded S/U.

H783 Honors Research U 3-6
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Su, Au, Wi, Sp Qtrns. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt/hr ratio in the field of distinction, sr standing, and cumulative pt/hr ratio commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.
Sensory Biophysics

105 Biological Sciences Building, 484 West 12th Avenue, 292-8772

601 Introduction to Sensory Biophysics U G 5
Anatomy and function of sensory systems; psychophysical research methods; mathematical descriptions of information transfer; biophysical models. Kornacker.
Wk Qtr. 5 cl. Prereq: Biology 101 or 113 or H115, Chem 122, Physics 112, and Math 117.

Serbo-Croatian

232 Cunz Hall, 1841 Millikin Road, 292-6733
See also Slavic Languages and Literatures.

101 Elementary Serbo-Croatian I
Not open to students with credit for 601, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of the GEC for language course. FL, Admis Cond course.
101.01 Classroom Track U 5
Au Qtr. 5 cl.

102 Elementary Serbo-Croatian II
Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or 601 or permission of instructor. Not open to students with credit for 602; or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL, Admis Cond course.
102.01 Classroom Track U 5
Wi Qtr. 5 cl.

104 Intermediate Serbo-Croatian II
Continuation of 103; development of the four skills.
Prereq: 103.01 or 5 cr hrs of 103.51 or 112 or equiv or permission of instructor. Not open to students with credit for 104 or 111; or to native speakers of this language through regular course enrollment or EM credit.
GEC for lang course.
104.01 Classroom Track U 5

111 Intensive Intermediate Serbo-Croatian U 5 or 10
An intensive course that combines the content of 103 and 104; balanced use of the four skills: reading, oral comprehension, speaking, and writing. Intended for students who wish to complete the entire course requirement.
Sp Qtr. 2-2 hr cl. Prereq: 102. Not open to students with credit for 104; or to native speakers of this language through regular course enrollment or EM credit. Students with credit for 103 or 112 may not register for more than 5 cr hrs but must complete the entire course. GEC course.

405 Conversation and Composition I
405.01* Classroom Track U 5
Reading texts of moderate difficulty, conversation, and simple compositions.
5 cl. Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit.
405.51 Individualized Track U 1-5
Reading texts of moderate difficulty, conversations, and simple compositions.
Prereq: 104.01 or 5 cr hrs of 104.51 or 111 or permission of instructor. Not open to students with credit for 602. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

407 Conversation and Composition II
407.01 Classroom Track U 5
Reading from modern Serbo-Croatian literature, practice in writing and speaking.
5 cl. Prereq: 405.01 or 5 cr hrs of 405.01 or 605 or permission of instructor.
407.51 Individualized Track U 1-5
Reading from modern Serbo-Croatian literature, practice in writing and speaking.
Prereq: 405.01 or 5 cr hrs of 405.51 or 605 or permission of instructor. Not open to students with credit for 606. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

580 Reading Serbo-Croatian I
580.51 Individualized Track U G 1-5
Development of reading skills, short texts and headlines from contemporary periodical and newspapers. Arr. Prereq: 5 cr hrs of 407.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 407.51 and 580.51 concurrently with permission of instructor.

581 Reading Serbo-Croatian II
581.51 Individualized Track U G 1-5
Continuation of 580.51; reading of somewhat more difficult unedited texts from contemporary periodical and newspapers; reading for comprehension without a dictionary. Arr. Prereq: 5 cr hrs of 580.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 580.51 and 581.51 concurrently with permission of instructor.

Shona

486 University Hall, 230 North Oval Mall, 292-3700

101 Elementary Shona I U 5
Development of oral proficiency in elementary conversational Shona. Au Qtr. 5 cl. GEC for lang course.

102 Elementary Shona II U 5
Continued development of oral proficiency in elementary conversational Shona.
Wi Qtr. 5 cl. Prereq: 101. GEC for lang course.

103 Intermediate Shona I U 5
Development of oral proficiency in intermediate conversational Shona.
Sp Qtr. 5 cl. Prereq: 102. GEC for lang course.

104 Intermediate Shona II U 5
Continued development of oral proficiency in intermediate conversational Shona.
Sp Qtr. 5 cl. Prereq: 103. GEC for lang course.

Slavic and East European Studies

322 Oxley Hall, 1712 Neil Avenue, 292-9600
See also Slavic Languages and Literatures.

894 Group Studies U G 1-5
Selected topics focusing on Slavic and East Europeans and the countries of Eastern Europe.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

Slavic Languages and Literatures

232 Cunz Hall, 1841 Millikin Road, 292-6733
See also Bulgarian, Czech, Polish, Russian, Serbo-Croatian, and Ukrainian.

130 Introduction to Slavic Culture: The Vampire in East European and American Culture U 5
Introduction to East European culture (including ethnic subgroups and religions), focusing on beliefs about vampires and their influence on western literature, film, and popular culture.
Au Qtr. 4 cl. Taught in English. GEC arts and hums cultures and ideas course.

214 Introduction to Slavic Literature and Culture U 5
Selected Slavic or East European literature(s) in its/their cultural context; relationships between literature, film, drama, may include art and music.
Au, Wi, Sp Qtrs. 2-2 hr cl. Repeatable to a maximum of 15 cr hrs. Taught in English. GEC arts and hums lit course.

214 Group Studies U 1-5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 10 cr hrs including cr hrs earned in 294.01 through 294.09.
519 Slavic Literature in English Translation from the Beginning to the Present U G 5
Emphasis on masterpieces of non-Russian Slavic literatures; epic tradition, Kocian, Comenius, Obradovic, Adamik, Miletic, Shevtchenko, Mach, Sienkiewicz, Reymont, Franko, Ukhvitsa, Vazov, Caspek, and Hasek. 4 cr. Not open to students with credit for 219.

671 Grammar of Selected Slavic Languages U G 5
Fundamentals of grammar required for reading one of the following: Belorussian, Russian, Macedonian, Slovak or Slovenian; the language to be taught will change each year. 5 cr. Prereq: Permission of instructor. Repeatable to a maximum of 25 or hrs; individual languages not repeatable. Taught in English.

672 Reading of Selected Slavic Languages U G 5
Reading of elementary and intermediate texts and translation into English from one of the following: Belorussian, Russian, Macedonian, Slovak or Slovenian. 4 cr. Prereq: 671 (same language) or equiv. Repeatable to a maximum of 25 or hrs; individual languages not repeatable. Taught in English.

693 Individual Studies U G 2-10
Su, Au, Wi, Sp Qtrs. Prereq: Permission of dept chairperson. Each division of study repeats to a maximum of 20 or hrs. These courses are graded S/U.

593.20 Literature
593.30 Linguistics
593.40 Languages
593.50 Unspecified

994 Group Studies U G 1-10
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 10 or hrs including or hrs earned in 694.01 through 694.11.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

699 Senior Tutorial and Essay U 5
Individual study which leads to the writing of an essay that will integrate the experience of earlier courses in Slavic.
Su, Au, Wi, Sp Qtrs. Open only to sr majors in Slavic languages.

750 Survey of the Slavic Languages U G 5
A general survey of all the Slavic languages and their common features.
Au, Wi, Sp Qtrs. 2 2-9 cr. Not open to students with credit for 860. Knowledge of a Slavic language is helpful but not required.

5783 Honors Research U 3-5
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the Slavic courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 9 or hrs. This course is graded S/U.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 or hrs with permission of dept.

810* Old Church Slavonic G 5
Study of the earliest Slavic language; reading and linguistic interpretation of original documents. 5 cr. Not open to students with credit for Russian 810.

812* Readings in Church Slavonic Texts G 5
Reading and analysis of Church Slavonic texts of the later period. 3 cr. Prereq: 810 or permission of instructor. Not open to students with credit for Russian 812.

821* Structure of Selected Slavic Languages G 5
Structure of any of the following: Belorussian, Bulgarian, Czech, Lusatian, Macedonian, Polish, Serbian-Croatian, Slovak, Slovenian, or Ukrainian. 3 cr. Prereq: Permission of instructor. Repeatable to a maximum of 25 or hrs; individual languages not repeatable.

834 Medieval Slavic Literatures 9th-14th Century G 5
Emphasis of the Eastern and South Slavic literatures.
3 cr. Prereq: Permission of instructor.

851* History of the South Slavic Languages G 5
Bulgarian, Macedonian, Serbian-Croatian, and Slovenian, with emphasis on Serbian-Croatian and its relation to the other South Slavic languages. 3 cr. Prereq: Good command of Russian and acquaintance with a second Slavic language or permission of instructor.

862* History of the West Slavic Languages G 5
Polish, Czech, Slovak, Polish, Czech, Slovak, and Lusatian, with special emphasis on Polish and its relation to the other West Slavic languages.
3 cr. Prereq: Good command of Russian, and acquaintance with a second Slavic language or permission of instructor.

854 Comparative Slavic Grammar G 5
Development of Indo-European phonology and morphology into Common Slavic and the development in contemporary Slavic languages. 3 cr. Prereq: 860 or permission of instructor.

870 Seminar in Slavic Philology G 3-5
Historical and comparative studies in the Slavic languages and related language families, including Baltic and Finno-Ugric.
2 cr. Repeatable to a maximum of 20 or hrs.

871 Seminar in Slavic Linguistics G 3-5
Descriptive and transformational studies in Russian and other Slavic languages.
2 cr. Repeatable to a maximum of 20 or hrs.

990 Interdepartmental Seminar G 3-5
Two or more departments present seminars on subjects of mutual interest; topics to be announced.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor(s). Repeatable to a maximum of 15 or hrs with permission of dept.

993 Individual Studies G 2-10
Su, Au, Wi, Sp Qtrs. Prereq: Permission of chairperson. Repeatable to a maximum of 40 or hrs in any combination of decimal subdivisions including or hrs in 993.01 through 993.11. These courses are graded S/U.

993.20 Literature
993.30 Linguistics
993.50 Unspecified

999 Research in Slavic G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Social and Behavioral Sciences,
College of

1010 Derby Hall, 154 North Oval Mall, 292-8448

204 Group Studies U 1-5
Interdisciplinary studies in the social and behavioral areas. Repeatable to a maximum of 15 cr hrs.

694 Group Studies U G 1-5
Interdisciplinary studies in the social and behavioral areas. Repeatable to a maximum of 15 cr hrs.

Social Work

300 Stillman Hall, 1947 College Road, 292-6288

230 Individual Needs and Societal Responses U 5
Introductory understanding of human needs, social values, ideologies, and institutional structures which have shaped the evolution of social welfare programs in America.
Au, Wi, Sp Qtrs. 2 1/2-hr cr, 2 1-hr labs. Not open to students with credit for 220. 800/GEOLAR course.
340 Social Work

300 Minority Perspectives: Race, Ethnicity, and Gender U 5
Examination of the structure of human societies, cultures, and institutions, and the allocation of resources from the vantage point of oppressed minority populations.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 10 cr hrs of course work in polit sc, psych, or social. Not open to students with credit for WSS.

367 Second Writing Course
367.01 Pathways to Poverty in an Age of Technology U 5
Examination of the consequences of underclass status associated with technological change; emphasis on development of writing and oral skills in considering social issues.
Au Qtr. 2 1½-hr cl; 1½ hr rec. Prereq: English 110 or 111 or equiv, and soph standing. GE/C/LR course.

494 Group Studies U 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered in social work.
Su, Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 10 cr hrs.

503 Juvenile Delinquency: Origins and Social Control U 5
Examination of juvenile delinquency as a social problem with emphasis on its history, policy initiatives, and treatment.
Wi Qtr. 2 2½-hr cl. Prereq: Jr standing; 15 cr in social sciences. GE/C/LR course.

509 Legal Aspects of Social Work U G 3
Law as a means of social control; study of case, statute, and constitutional law most frequently involved in social work practice; legal aid.
Sp Qtr. 2 1½-hr cl. Prereq: 3rd or 4th yr standing or permission of instructor.

520 Problems, Policies, and Programs in Social Welfare I U 3
An introduction to historical backgrounds and the utilization of an analytical framework in the study of the American social welfare system.
Au Qtr. 2 1½-hr cl. Prereq: Soc work major; nonmajors with permission only. H520 (honors) may be available to students enrolled in an honors program or by permission of instructor.

521 Problems, Policies, and Programs in Social Welfare II U 3
Application of an analytical framework to the study of current issues and problems of policies, programs, and social welfare services in the perspective of the American social welfare system.
Wi Qtr. 2 1½-hr cl. Prereq: 520.

533 Determinants of Social Functioning I U 3
Study of life cycle, growth, and development from birth through adolescence from a bio-psycho-social perspective; selected theories of personality discussed in relationship to growth and development.
Au Qtr. 2 1½-hr cl. H533 (honors) may be available to students enrolled in the Social Work honors program, or by permission of instructor. Prereq: Jr. standing in soc work.

534 Determinants of Social Functioning II U 3
Study of life cycle from young adulthood through old age including dying and death; discussion of influences on social functioning of group relationships, organizations, and institutions.
Wi Qtr. 2 1½-hr cl. Prereq: 533.

570 Quantitative Analyses of Social Data U 5
Examination of social welfare data with a focus on data analysis; review of descriptive and inferential methods with a primary emphasis on interpretation and computer applications.
Au Qtr. 2 2-hr cl, 1-hr lab arr. Prereq: 230 and Math 104 or equiv. GE/C/LR course.

571 Introduction to Research Methods in Social Work U 4
Science and society; research design; measuring variables; data collection, processing, and analysis.
Wi Qtr. 2 2-hr cl. H571 (honors) may be available to students enrolled in the Social Work honors program, or by permission of instructor.

576 Critical Assessment of Social Research U 5
Development of practical skills in critical and analytic writing in weighing competing ideas both in writing and oral forms.
Sp Qtr. 2 2½-hr cl. Prereq: 571 or equiv; English 110 or 111, second writing course, and jr or sr standing. GE/C/LR course.

503 Individual Studies U 1-5
Individual study projects on problems and services in selected areas of social welfare; report required.
Su, Au, Wi, Sp Qtrs. Prereq: 10 cr hrs in soci work or related courses, approval of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

595 Integrative Seminar U 3
Lectures and discussions designed to apply core curriculum content to areas of contemporary concern to social workers; focus on the development of assessment skills.
Sp Qtr. 2 1½-hr cl. Prereq: 521, 534, 571; nonmajors by permission only.

597 Adolescent Parenthood and Sexuality: International Perspectives U 5
Examination of origins of adolescent sexual problems in milieus that develop different value systems; public policies and social programs designed to control adolescent sexuality and parenthood.
Au Qtr. 2 2½-hr cl. Prereq: Sr standing; and 15 cr hrs of course work in social science in individual development, adolescence, the family, culture, and social change. GE/C/LR course.

644 Social Work Practice Lab U 3
Introduction to practice-relevant communication; interactive group skills; extensive use of discussion-participation, role play, and demonstration with help of audio-visual media.
Sp Qtr. 2 1½-hr cl. Conc: 645. Open only to social work majors.

645 Social Work Practice I U 4
Foundation professional values, practice knowledge and change-oriented action within a generalist ecological perspective for working with people at various levels of human systems.
Sp Qtr. 2 2-hr cl. Prereq: Jr standing and conc 644.

646 Social Work Practice II U 3
Values, knowledge, and skills of generalist social work practice with individuals and families by using an ecological problem-solving model.
Au Qtr. 2 1½-hr cl. Prereq: 644 and 645; soc work majors only.

647 Social Work Practice III U 3
Generalist-ecological framework with professional values, knowledge, and skills essential to effective intervention with small groups and community groups.
Wi Qtr. 2 1½-hr cl. Prereq: 646. Open only to soc work majors.

689 Field Practice U 1-18
Placement in a social welfare organization used by the college as a teaching center; student expected to assume a service provision role in a progressively responsible manner.
Au, Wi, Sp Qtrs. Social agency assignments. Prereq: 644, 645, and proof of liability insurance. Repeatable to a maximum of 18 cr hrs.

690 Ethical Issues in Social Work Practice U G 4
Historical, philosophical and legal foundations giving rise to ethical principles which underlie social work practice.
Su, Wi Qtrs. 1 3-hr cl, 1-hr arr lab. Prereq: Sr standing. Satisfies 4 credits for the LSW License Renewal.

691 Case Management and Social Work Practice U G 4
Social work competencies in the provision of services to address client problems and populations. Emphasis on client/family strengths and social networks.
Au, Sp Qtrs. 1 3-hr cl, 1-hr lab arr. Prereq: Sr standing. Satisfies four credits of LSW license renewal.

694 Group Studies U G 1-5
Selected topics.
Su, Au, Wi, Sp Qtrs. Arr.

695 Integrative Seminars U G 3
Examines the various fields of social work practice; focuses on developing the ability to set practice goals, decide methods of intervention, implement, and evaluate consequences.
Su, Au, Wi, Sp Qtrs.

695.09 Alcoholism
1 3-hr cl.

695.10 Women's Issues
1 3-hr cl.

695.11 Intensive, In-Home, Family-Based Treatment
Holistic approach to home-based family services; includes advocacy, didactic instruction and resource networking.
Au, Wi, Wi, Sp Qtrs. 1 3-hr cl. May fulfill Social Work elective credits.

695.12 Child and Family Services
1 3-hr cl. Not open to students with credit for 640.01. May be taken to fulfill social work elective or hrs.

695.13 Corrections
1 3-hr cl. Not open to students with credit for 640.02. May be taken to fulfill social work elective or hrs.

695.14 Aging
1 3-hr cl. Not open to students with credit for 640.03. May be taken to fulfill social work elective or hrs.
695.15 Mental Retardation and Developmental Disabilities
1 3-hr cl. Not open to students with credit for 640.04. May be taken to fulfill social work elective or hrs.
695.16 Physical Health Care
1 3-hr cl Not open to students with credit for 640.05. May be taken to fulfill social work elective or hrs.
695.17 AIDS: Facts and Issues U G 3
Au Qtr. 1 21/2-hr cl. Certificate upon completion of 695.17, 695.18, 695.19.
695.18 AIDS: Psychosocial Aspects U G 3
Wi Qtr. 1 21/2-hr cl. Prereq: 695.17. Certificate upon completion of 695.17, 695.18, 695.19.
695.19 AIDS: Community Response U G 3
Sp Qtr. 1 21/2-hr cl. Prereq: 695.18. Certificate upon completion of 695.17, 695.18, 695.19.

H696 Thesis Seminar U G 3
Direction will be provided to facilitate honors students and MSW students at designing a thesis proposal.
Sp Qtr. 1 21/2-hr cl. Prereq: H521, H533, H571, or MSW major. Not open to students with credit for H694. Open only to soc work majors.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs; subdivisions not repeatable.
Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

697.01 Social Work in the Context of Social Development: Comparative Policy and Practice in India U G 5
Emphasizes comparative social work practice and policy within a social development framework; addresses a variety of fields of practice: health, child welfare, and others.
Su Qtr. Arr. Prereq: Permission of instructor; concurrent enrollment required in International Studies 697 (Indian History, Society, and Culture). Course taught on location in South India (mostly Madras) as part of an international education offering.

697.02 Social Welfare in Eastern Europe: The Polish Experience U G 6
Focus on social welfare policy and practice in Poland through lectures and visits to social service agencies in Cracow, Poland.

698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of Instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign

H699 Honors Research U 3-12
Research for Honors Thesis purpose only.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a grade of A in at least half of the soc work courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Social Work Honors committee. Repeatable to a maximum of 12 cr hrs. This course is graded SU.

700 Interprofessional Education
Focus on ethical issues, changing professional/consumer rights, and interprofessional cooperation.
3-hr cl. Repeatable to a maximum of 9 cr hrs. Limited to students in allied medical professions, education, law, medicine, nursing, social work, and theology.

700.01 Seminar on Interprofessional Care U G 3
Treatment of the whole person through the analysis of the interrelated problems of actual patients/clients.
Wi, Sp Qtrs.

700.02 Changing Societal Values U G 3
Identification and clarification of values considerations as they relate to professional problems in dealing with consumer/clients/patients.
Sp Qtr.

700.03 Ethical Issues U G 3
Ethical issues of concern to the professions and arising out of the advanced technology: euthanasia, mind control, malpractice, and social responsibility of the professions.
Au Qtr.

700.05 Interprofessional Seminar in Policy Analysis U G 3
Explores interprofessionally the history, formation, and implementation of public policy issues of significance to seven helping professions.
Wi Qtr. 3 cl. Prereq: Permission of Instructor.

700.06 Care of Chemically Dependent Families U G 3
Interprofessionally explores issues in the identification and treatment of chemical dependency within the family context.
Wi Qtr. Prereq: Permission of instructor.

700.07 Interprofessional Approaches to Child Abuse and Neglect G 3
Interprofessionally explores issues in the identification, treatment, and prevention of child abuse and neglect.
Au Qtr. 1 21/2-hr cl. Prereq: Permission of instructor. Limited to 12 students each in allied medicine, education, law, medicine, nursing, psychology, social work, and theology through Columbus Cluster.

703 Seminars in Social Welfare Policy and Program Analysis P G 3
Au, Wi, Sp Qtrs. 1 21/2-hr cl. Prereq: 721 or eqv and written permission of instructor. Repeatable to a maximum of 9 cr hrs.
D—Law and Social Work
E—International Social Welfare
G—School

710 Women’s Issues in Social Work P G 3
Examination of relevant issues in the professional practice of social work.
Su, Sp Qtrs. 1 21/2-hr cl.

711 Race and Ethnicity in Social Work Practice P G 3
An analytical approach to problems, needs, and intervention for effective social work practice with the oppressed target populations of Appalachians and Blacks.
Su, Sp Qtrs. 1 21/2-hr cl. Prereq: Grad standing.

712 Social Welfare and the Jewish Community P G 3
A study of the historical, cultural, and religious antecedents for the development of the current organization of Jewish Communal Services in the United States.
Sp Qtr. 1 21/2-hr cl. Prereq: Grad standing.

713 Social Work Practice in the Schools G 3
Examination of major issues in American schools, theoretical framework for social work services, delivery of services, models of school social work services, intervention, and intervention strategies.
Wi Qtr. 1 21/2-hr cl. Prereq: Grad standing or permission of instructor.

717 Nisonger Center Courses in Mental Retardation and Developmental Disabilities U G 3
Focus on interdisciplinary topics in mental retardation and developmental disabilities.

717.01 Family Systems: An Interdisciplinary Approach to Families of Handicapped Children
Qualitative and quantitative approaches for resource and problem identification with families of handicapped children, effective parenting skills, strategies to follow at-risk families, and family intervention models.
Wi Qtr. 1 3-hr cl. Not open to students with credit in 717.01 in any cross-listed areas.

717.02 The Interdisciplinary Team: Clinical and Administrative Issues
Investigation and critical examination of function of interdisciplinary clinical and administrative teams in mental retardation and developmental disabilities.
Su Qtr. 1 3-hr cl. Not open to students with credit in 717.02 in any cross-listed areas.

717.03 Developmental Disabilities
Focus on the most pertinent scientific and societal issues of developmental disabilities.
Au Qtr. 1 3-hr cl. Not open to students with credit for 717.03 in any of the cross-listed areas. Cross-listed in Allied Medicine, Educational Services and Research, Health, Physical Education, and Recreation, Human Nutrition and Food Management, and Psychology.

720 Social Welfare Policies and Programs P G 3
Historical and comparative analysis of social welfare systems; their relationship to change in the basic social institutions: family, church, government, and economic institutions.
Au Qtr. 1 21/2-hr cl. Prereq: Soc work grad standing or permission of instructor.

721 Social Welfare Policies and Programs II P G 3
The development and application of a conceptual model for social welfare policy and program analysis.
Wi Qtr. 1 21/2-hr cl. Prereq: 720.
730 Seminars in Social Functioning  P G 3-5
Critical examination of personality, interactional, small group, organizational and community concepts and approaches used in social work analysis of social dysfunction.
Su, Sp Qtr.  1 2/3-hr cl.  Prereq:  Soc work grad standing.
A— Institutional and Organizational Behavior
B— Psychopathology and Deviance

733 Human Behavior and the Social Environment I  P G 3
Social work theories and concepts related to individuals and families as they develop over the life span; systems model provides a unifying framework.
Au Qtr.  1 2/3-hr cl.  Prereq:  Soc work grad standing or permission of instructor.

734 Human Behavior and the Social Environment II  P G 3
Continues applying the social work systems and life span frameworks to extra-familial environments (i.e., groups, communities and cultures) that affect individual development and social functioning.
Wi Qtr.  1 2/3-hr cl.  Prereq:  733.

735 Human Behavior and the Social Environment III  P G 3
Su, Au, Wi, Sp Qtr.  1 2/3-hr cl.  Prereq:  Grad standing.

741 Clinical Practice
Theory and methods of clinical social work practice with individuals, families, and groups; social work philosophy and values in the study of assessment, evaluation, and methods of intervention.

741.01 Introduction  P G 3
Su, Sp Qtr.  1 2/3-hr cl.  Prereq:  746.

741.02 Individual  P G 3
Su, Au Qtr.  1 2/3-hr cl.  Prereq:  741.01.

741.03 Conjunct Marital and Family Therapy  P G 3
Wi Qtr.  1 2/3-hr cl.  Prereq:  741.01.

741.04 Crisis Intervention  P G 3
Sp Qtr.  1 2/3-hr cl.  Prereq:  741.01.

741.05 Groups  P G 3
Au Qtr.  1 2/3-hr cl.  Prereq:  741.01.

741.06 Special Topics  P G 2-5
Au, Wi, Sp Qtr.  Arr.  Repeatable to a maximum of 20 cr hrs.

742 Administrative Aspects of Practice in Human Services Organizations
Examines generic functions and processes of administration in relation to a conceptual framework for the management of human services professionals, based in a social work value orientation; application to public and voluntary social welfare/human services organizations.

742.01 Introduction  P G 3
Su, Sp Qtr.  1 2/3-hr cl.  Prereq:  746.

742.02 Staffing  P G 3
Au Qtr.  1 2/3-hr cl.  Prereq:  742.01.

742.04 Administrative Aspects of Practice in Human Services Organizations: Social Welfare Planning Methods  P G 3
Wi Qtr.  1 2/3-hr cl.  Prereq:  742.01.  Not open to students with credit for 742.07.

742.05 Financial Management  P G 3
Wi Qtr.  1 2/3-hr cl.  Prereq:  742.01.

742.06 Management Information Systems  P G 3
Au Qtr.  1 2/3-hr cl.  Prereq:  742.01.

742.09 Special Topics  P G 2-5

742.10 Supervision  P G 3
Sp Qtr.  1 2/3-hr cl.  Prereq:  730A.

743 Social Planning Aspects of Practice
Concepts and strategies involved in the design, planning, implementation, monitoring, and evaluation of social delivery.

743.03 Neighborhood and Community Development  P G 3
Sp Qtr.  1 2/3-hr cl.  Prereq:  746.

743.04 Theories of Social Welfare Planning  P G 3
Historical and current views of planning are examined for their value in understanding social welfare planning theory; the roles of government and private forces are examined for their respective contributions to the development of contemporary social planning theory.
Au Qtr.  1 2/3-hr cl.  Prereq:  743.03.  Not open to students with credit for 743.04.

744 Social Work Practice Lab  P G 2
Experiential learning to complement the theoretical constructs studied in 743.
Au Qtr.  1 3-hr cl.  Prereq:  Soc work grad standing. This course is graded S/U.

745 Practice and Profession I  P G 3
Emerging development of social work, its fundamental goals, knowledge, values, ethics, and Interventive approaches focusing primarily on micro- and mezzo-ecosystems and a beginning conceptual framework for practice.
Au Qtr.  1 2/3-hr cl.  Prereq:  Soc work grad standing; concur 744.

746 Practice and Profession II  P G 3
Continued examination of key elements of social work focusing primarily on mezzo- and macro-ecosystem approaches, and concluding with an integrated framework for social work practice.
Wi Qtr.  1 2/3-hr cl.  Prereq:  744 and 745.  Open only to SWK majors.

750 Social Welfare Policies and Programs  P G 3
Unique and specific aspects of social welfare policies and programs in selected fields of Social Work which augment Clinical and Social Planning/ Administration concentrations.
Au, Wi, Qtr.  1 2/3-hr cl.  Prereq:  721.  Students may not register for more than a total of 9 cr hrs under this number; subdivisions not repeatable.

750.01 Child and Family Services
Understanding and application of the analytic model of social welfare policies and programs of social work intervention as applied to child and family social work practice.

750.02 Aging
Examination of social welfare policies affecting the elderly; identification of current and future issues and comparison of international, federal, state, and local programs.

750.03 Health
Analysis of social and economic policies and political forces which influence the delivery of health services and the role of social workers in health care.

750.04 Mental Health
Utilizing a social policy analytic framework; introduces social welfare policy issues and program organization.

750.05 Mental Retardation and Developmental Disabilities
Focuses on analysis of problems, policies, and programs which affect practice with the MR/DD population and their families.

751 Social Work Practice  P G 3
Unique and specific aspects of social work practice in related fields and social work which augment clinical and social planning/administration concentrations.
Au, Wi, Qtr.  1 2/3-hr cl.  Prereq:  746.  Students may not register for more than a total of 9 cr hrs under this number; subdivisions not repeatable.

751.01 Child and Family Services
Develops advanced skills in dealing with problems of children and their families to assure protection and permanency through direct and indirect social work intervention.

751.02 Aging
Theoretical perspectives relevant to the aging process are examined; review of special concerns and treatment modalities unique to adults in middle and later years.

751.03 Health
Knowledge and skills for specialized social work practice in health; clinical, planning, and administrative roles in several subspecialties are addressed.

751.04 Mental Health
Provides knowledge and skills in clinical, and planning/administrative modes of practice in a range of mental health settings with selected target populations.

751.05 Mental Retardation and Developmental Disabilities
Provides advanced knowledge and skills of multiple social work roles in working with MR/DD clients and their families.

770 Research Methods in Social Work  P G 3
Basic research methodology; the role of research in social work.
Su, Au Qtr.  1 2/3-hr cl.  Prereq:  Soc work grad standing or permission of instructor.

771 Data Analysis Designs  P G 3
Interpretation of social work data; quantitative techniques; designs of data analysis.
Su, Wi Qtr.  1 2/3-hr cl.  Prereq:  Soc work grad standing or permission of instructor.

775 Methods and Techniques in Social Work Research
The study of methodological issues in social work research; focus on the various phases of research process.
1 2/3-hr cl.  Prereq:  770.

775.01 Needs Assessment in the Human Services  P G 3
Su, Sp Qtr.

775.02 Data Processing Methods  P G 3
Au Qtr.

775.09 Special Topics  P G 2-5
Arr.  Repeatable to a maximum of 20 cr hrs.
Sociology 343

798 Field Practicum I P G 1-15
Integration of field practice with social work practice theory.
Su, Au, Wi, Sp Qtrs. Prereq: 744 and 745; proof of liability insurance.
Placement in assigned human service organization 2 days w/k. Normally
scheduled Wi and So Qtrs. Arr with student's faculty adviser. Open only to
SWK majors. Repeatable to a maximum of 15 cr hrs. This course is graded
SU.

793 Individual Studies P G 1-5
Directed readings and tutorials related to specific problems.
Su, Au, Wi, Sp Qtrs. Prereq: Soc work grad standing, permission
of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

794 Group Studies P G 1-4
Group seminars in specialized areas of curriculum.
Su, Au, Wi, Sp Qtrs. Prereq: Soc work grad standing, permission
of instructor. Repeatable to a maximum of 15 cr hrs.

797 Interdepartmental Seminars U G 1-5
Two or more departments may collaborate in presenting seminars in
subjects of mutual interest; topics to be announced.
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of college secretary. Repeatable
to a maximum of 9 cr hrs.

875 Seminars on the Application of Evaluation Designs to
Social Work Research
Application of experimental design to the evaluation of outcomes in social
work practice. Focus on types of design, collection and analysis of data,
and interpretation of data for agency decision-making: practical and/or
evaluation proposals required.
875.01 Single Case Design G 3
Su, Sp Qtrs. 1 1/2-hr cr. Prereq: 770.
875.03 Program Evaluation G 3
Su, Sp Qtrs. 1 1/2-hr cr. Prereq: 770.

889 Field Practicum II P G 1-15
Designed to permit students to achieve greater autonomy and to maximize
skill development in the integration of social work theory and practice.
Placement 3 days w/k. Au, Wi, Sp Qtrs. in human service organization in
accordance with student's primary mode of intervention. Prereq: 785;
proof of liability insurance. Repeatable to a maximum of 21 cr hrs. This
course is graded S/U.

894 Group Studies G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: MSW or equiv with written permission
of instructor. Repeatable to a maximum of 20 cr hrs, not more than 10
of which shall be in any one of the following areas:
A- Social Work Practice
B- Social Welfare Policy
C- Dynamics of Social Functioning
D- Other

900 Theory Building
Theory construction, elements of theory, knowledge-building, and general
epistemological issues related to social work and social science theory on
micro and macro levels.
Au, Wi Qtrs. Repeatable to a maximum of 9 cr hrs.
900.01 Knowledge-Building in Social Science and Social Work Theory G 3
Au Qtr. 1 3-hr cr. Prereq: PhD standing.
900.02 Micro Theory: Theories of Individual Functioning G 3
Wi Qtr. 1 3-hr cr. Prereq: 900.01.
900.03 Macro Theory: Social Theory and Social Welfare G 3
Wi Qtr. 1 3-hr cr. Prereq: 900.01.

901 Social Work Research
Quantitatively-oriented research methods, qualitatively-oriented research
methods, computer literacy, and data processing skills.
Prereq: PhD standing; completion of research proficiency requirements;
and written permission of the Director of the PhD Program.
901.01 Quantitative Research Methods in Social Work G 3
Au Qtr. 1 3-hr cr.
901.02 Qualitative Research in Social Work G 3
Au Qtr. 1 3-hr cr.
901.03 Computer Literacy in Social Work G 3
Sp Qtr. 1 3-hr cr. Prereq: 901.01; grad level stats course.

902 Social Work Practice Theory
Advanced courses in social work practice such as clinical practice
administration and policy courses on social change, international social
welfare, and social work education.
Au, Sp Qtrs. Prereq: PhD standing. Repeatable to a maximum of 25 cr hrs.

902.01 Advanced Practice in Clinical Social Work G 5
Au, Sp Qtrs. 1 5-hr cr.
902.02 Advanced Practice in Social Work Policy and
Administration G 5
Au, Sp Qtrs. 1 5-hr cr.
902.03 Current Issues in Social Work Education G 5
Sp Qtr. 1 5-hr cr.
902.04* International Issues in Social Work Practice and Social
Development G 5
Sp Qtr. 1 5-hr cr, 1 3-hr cr. Prereq: PhD standing or permission
of instructor. Alternates with 902.03 every other year.

903 Proposal Development G 3
Designed to help develop the dissertation proposal; present ideas, receive
feedback, and defend proposal to students and faculty in an open forum.
Wi Qtr. 1 5-hr cr. Prereq: 2nd yr PhD standing.

910 Introduction to Doctoral Studies G 1
This course provides a foundation for successful doctoral study through
interactions between students and faculty, defining standards for scholarly
achievements, and fostering peer social support. 1 1/2-hr cr. Prereq: Doctoral standing. Enrollment limited to 1st yr PhD
students in Social Work. This course is S/U graded.

993 Individual Studies G 1-5
Directed readings and tutorials related to specific problems and issues in
following areas:
A- Social Work Practice
B- Social Welfare Policy
C- Dynamics of Social Functioning
D- Other

998 Research in Social Work: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

998 Research in Social Work: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Sociology
300 Bricker Hall, 190 North Oval Mall, 292-6681

101 Introductory Sociology U 5
Fundamental concepts of sociology and an introduction to the analysis of
social problems.
Su, Au, Wi, Sp Qtrs. H101 (honors) may be available to students enrolled
in an honors program. Not open to students with credit for 201 or equiv or
Rurf Soc 105 or equiv. GEC soc sci organizations and politics, and social
diversity course. SS Admis Cond course.

202 Social Problems U 5
Analysis of contemporary social problems.
SS Admis Cond course.

209 Introduction to Criminal Justice U 5
Examination of the development and administration of criminal law and
agencies (police, prosecutors, courts); emphasis on criminal proceedings
and their justification.
Au, Wi, Sp Qtrs. 5 cr. Not open to students with credit for Criminal 209. SS
Admis Cond course.

210 Sociological Aspects of Deviance U 5
Study of the definition, identification, treatment, and control of types of
legal, moral and status deviance, such as crime, mental illness, alcoholism
and other individual pathologies.
Au, Wi, Sp Qtrs. Not open to students with credit for Criminal 210.
GEC soc sci individuals and groups course. SS Admis Cond course.

294 Group Studies U 3-5
Topics vary each quarter offered.
Prereq: 101. Repeatable to a maximum of 10 cr hrs.
288 Study Tour U 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor; Repeatable for different titled study tours only.
288.01 Domestic
288.02 Foreign

302\ Technology and Global Society U 5
Social aspects of technology, social change, and technological development; underdevelopment and the global economy.

306\ Sociology of Poverty U 5
A study of low-income peoples, especially concerning the effect of poverty on them, and their consequent social participation.
Not open to students with credit for 206. GEC social diversity course. SS Adms Cond course.

320 Sociology of Education U 5
Current social trends as they affect education; backgrounds of school children, social status of teachers, role of power and bureaucracy.
Prereq: 5 cr hrs in soc. Not open to students with credit for 220. SS Adms Cond course.

330\ Varieties of Modern Marriage U 5
Examination of sociological and social-psychological research describing and interpreting emerging pluralistic patterns of man-woman and parent-child relationships.

345 Contemporary American Society U 5
An exposition of the structural patterns of American society, using sociological theories and data but integrating them into a general view. H345 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 545. GEC soc sci organizations and polities course.

357 Second Writing Course U 5
2 2-hr cl. GEC second writing courses.
H357.01 Politics and American Society
Sociological analysis of American politics and society, emphasizing political elites and interest groups, and the changing role of the state in the economy.
Prereq: English 110 or 111 or equiv. 5 cr hrs of course work in poli sci or soc, and soph standing. Not open to students with credit for 366.

367.02 Cities and Urban Life
The place of the city in social organization; the emergence, nature, and problems of modern urbanism; projects based on census and field data.
Prereq: English 110 or 111 or equiv, 5 cr hrs in soc, and soph standing. Not open to students with credit for 280, 290, or 480.
H367.03 Work and Family in the United States
Sociological examination of linkages between occupational and economic arrangements and marital and parental experiences in the United States.
Prereq: H100 or 101, English H110 or 111 or H111, honors eligibility, and soph standing.

370 Social Factors in Personality U 5
Analysis of relationships between social structure and personality; language; its consequences for social behavior; socialization: learning of motives and social roles; personality: development, organization, and disorganization.
Not open to students with credit for 470. GEC soc sci individuals and groups course.

380 American Ethnic Relations U 5
Survey of the attitudes and relationships arising from the contacts of various racial and ethnic groups in the United States.
Not open to students with credit for 280 or 480. GEC soc sci individuals and groups course. SS Adms Cond course.

382 Sociology of Asian American Life U 5
Introduction to Asian American life with attention to this group's social history, present status, and racial-ethnic relations.
GEC social diversity course.

391 The Community U 5
Development of the modern community; approaches to the study of communities; significance of processes and value systems for community organization and disorganization.
Not open to students with credit for 590.

405\ Social Movements and Collective Behavior U 5
Contemporary social movements and collective behavior; their sources, issues, strategies, tactics, and impact on society.
Prereq: 5 cr hrs in soc. Not open to students with credit for 605. GEC social diversity course.

407 Social Change U 5
Recent social changes, especially in Western civilization and the United States; types of societies in historical perspective; requirements of a good society.
Prereq: 5 cr hrs in soc. Not open to students with credit for 207.

410 Criminology U 5
The nature and causes of crime and delinquency, criminal liability, criminal careers, and organized racketeering.
Au, Wi, Sp Qtrs. H410 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for Criminol 410.

430 Sociology of the Family U 5
Analysis of relationships between the family and the larger society including mate selection, status of women, and patterns of husband-wife and parent-child relationships.
Au, Wi, Sp Qtrs. Prereq: 5 cr hrs in soc.

434 The Child and Society U 5
A study of the ways in which society socializes children; current breakdown in the socializing processes and implications for the school and other educational agencies.
Prereq: 5 cr hrs in soc.

435 Sociology of Women U 5
Analysis of sex-roles and social structure with emphasis on modern social movements concerned with redefining sex-role relationships.
Prereq: 5 cr hrs in soc. GEC social diversity course.

450 Illness and Social Behavior U 5
Study of cultural, social, psychological, and sociological factors in disease processes, distribution of disease, definition of illness, organization of health professions and facilities.
Prereq: 5 cr hrs in soc.

462 Sociology of Organizations U 5
Functioning of large complex social groupings: goals, structures, coordination, dispersion, survival, change as seen in various organizations: e.g. governmental, educational, religious, business, and occupational organizations.
Prereq: 5 cr hrs in soc. GEC soc sci organizations and polities course.

463 Social Stratification U 5
Class distinction as a phase of social differentiation; origin and characteristics of social class; significance of modern society of class consciousness, class struggle, and social mobility. 2-2-hr cl.
Prereq: 5 cr hrs in soc. GEC soc sci human, natural, and economic resources course.

464 Sociology of Work U 5
Analysis of work organization; control and authority relationships in the workplace; comparative studies of work and labor movements; industrial decline, automation.
Prereq: 5 cr hrs in soc.

4651 Work and Leisure in Mass Society U 4
An analysis of current relationships between work and leisure, emphasizing social implications of increased leisure time and changing conceptions of work and leisure.
Prereq: 5 cr hrs in soc.

466 Sociology of Occupations and Labor Markets U 5
Analysis of occupational differentiation; differences in work experience and outcomes across occupations; work within organizations; work and labor markets; race and sex differences in work.
Prereq: 5 hrs in soc. GEC soc sci human, natural, and economic resources course.

467 Sociology of Religion U 5
The social role of religious institutions and beliefs, with particular reference to the United States; the relation between religion and other aspects of society.
Prereq: 5 cr hrs in soc. GEC social diversity course.

487 Types of Sociological Inquiry U 5
Introduction to sociological research techniques, methodological approaches, and relevant quantitative procedures.
Au, Wi, Sp Qtrs. 2 1/2-hr cl, 2 1-hr labs. Prereq: Criminol or fm&hu dv or int stds or socio major, and jr standing; or permission of instructor. Not open to students with credit for 250.

488 Introduction to Sociological Theory U 5
Introductory statement of the nature of sociological theory, its basic problems, assumptions, major types and orientations, and principal contributions to the discipline.
Au, Wi, Sp Qtrs. Prereq: 5 cr hrs in soc.
501 East Asian Social Development U G 5
Comparative analysis of social development experiences in China, Japan, Korea, and other East Asian newly industrializing societies. Prereq: 487 and 488, or grad standing.

502 West European Societies U G 5
Major West European nations from 1945 to present; major social developments: economic reconstruction, decolonization, welfare, schools and universities, labor force and stratification, political parties. Sp Qtr. 2 2-hr cl.

503 Soviet and East European Societies U G 5
Development and organization of political and social institutions, with emphasis on cross-national similarities and differences in the region. Prereq: 487 and 488, or grad standing. Not open to students with credit for 403.

507 The Criminal Justice System U 5
The role and operation of the criminal justice system: police, the courts and the legal system. Prereq: 487 and 488, or grad standing.

509 Sociology of Law U 5
The relationship between law and social order emphasizing the structure of law, social origins of law and law as a source of social change. 2 2-hr cl. Prereq: 487 and 488, or grad standing. Not open to students with credit for 451.

510 Women, Crime, and the Legal System U 5
Analysis of females as participants in and victims of crime, the treatment of women in the criminal justice system, women as workers in criminal justice fields. Prereq: 487 and 488, or grad standing.

511 Sociology of Youth and Crime U G 5
A sociological perspective on youth and crime; special attention to the magnitude of youth crime, theories, juvenile justice systems, and prevention and control efforts. Prereq: 487 and 488, or grad standing.

549 Quantitative Research Methods in Sociology U G 5
An introduction to the application and interpretation of quantitative analysis in sociological research; emphasis on the description of social variables and hypothesis testing. Au, W, Sp Qtr. HS49 offered Au Qtr. 2 1 ½-hr cl and 2 1-hr labs. HS49 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 487. Prereq for HS49: 487, Math 116 or equiv, and Pr stands or permission of instructor. Not open to students with credit for 650, GEC data analysis course.

581 The American Jewish Community U G 5
American Jewish life-styles and organizational patterns--Jewish history, demography, institutions, religious participation, politics, relationships with non-Jews, new movements and issues. Prereq: 487 and 488, or grad standing. Not open to students with credit for 281. SS Admis Cnd course.

589 Field Work in Sociology U 5
589.01 Sociology
Practicum in the collection of sociological data through field work; identification of research problem; development of data collection methods; data processing and analysis. Prereq: 10 cr hrs in social and permission of instructor. Not open to students with credit for 589.

589.02 Criminology and Criminal Justice
Practicum in criminology and the criminal justice system. Prereq: 10 cr hrs in social or criminal and permission of instructor.

597 Issues of the Contemporary World U 5
GEC courses.

597.01 Contemporary World Societies: Social Institutions and Social Change
Sociological analysis of contemporary world societies—non-industrialized, industrializing, and industrialized—with special attention to major social institutions and patterns of social change. Prereq: Sr standing. Not open to students with credit for 301.

597.02 World Population Problems
General introduction to population studies, emphasizing how population growth and structure have caused or aggravated social problems in various countries. Au, W, Sp Qtr. Prereq: 6 or hrs of social science course work, GEC data analysis requirement, and sr standing. Not open to students with credit for 313.

599 Comparative Family Organization U G 5
Analysis of family organizations in various societies, emphasizing the impact of changing world conditions on family and kinship structures. Prereq: 487 and 488, or grad standing. Not open to students with credit for 432.

599 Social Movements and Collective Behavior U G 5
An examination of theories and research on non-traditional group efforts to change social systems and institutions; emphasis on contemporary societies and movements. Prereq: 487 and 488, or grad standing. Not open to students with credit for 710 or 805.

599 Gender, Race, and Class in Mass Communications U G 5
Sociological aspects of mass communications; emphasis on relationships among media, audience and social structure; examination of media culture and depictions of race, class, and gender. Prereq: 487 and 488, or grad standing, GEC social diversity course.

599 Neighborhoods and Crime U G 5
Exploration of the social distribution of crime, with attention to the patterns and sources of neighborhood crime, and the impact of crime on fear of crime and on neighborhood decline. Au Qtr. 2 2-hr cl. Prereq: 487 and 488, or grad standing.

610 Sociology of Deviant Behavior U G 5
An examination of the nature, types, and societal reactions to deviant behavior; special emphasis on the process of stigmatization and the emergence of deviant subcultures. Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminal 610.

611 Penology U G 5
The treatment of adult offenders in detention and incarcerations; short and long term institutions. Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminal 611.

615 Control and Prevention of Crime and Delinquency U G 5
Analysis of the operational effectiveness of special measures and programs directed toward the control and prevention of crime and delinquency. Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminal 615.

518 Sociology of Police and Policing U G 5
Sociological understanding of the origins of routine police conduct and misconduct; representative topics include police-citizen encounters and police abuse of discretion. Prereq: 487 and 488, or grad standing. Not open to students with credit for Criminal 618.

523 Advanced Sociology of Education U G 5
Comparisons of the structures and functions of educational systems, elementary through university; recruitment and allocation of personnel and resources, power, conflict, and boundary maintenance. Prereq: 487 and 488, or grad standing. Not open to students with credit for 523.

529 Sociology of Health: Mental and Physical Dimensions U G 5
Analysis of sociological and medical psychological aspects of mental and physical disorders, and types of illness behavior associated with mental and physical illness. Prereq: 487 and 488, or grad standing. Not open to students with credit for 531.

530 Medical Sociology U G 5
Sociological analysis of the distribution of disease, and the nature of health care institutions, health professions, and the delivery of health care services. Prereq: 487 and 488, or grad standing. Not open to students with credit for 730.

535 Men in Society U G 5
The social psychology of males, their relationships with females, other males, and society; emphasis on socialization, social roles, sexuality, etc. Prereq: 487 and 488, or grad standing. Not open to students with credit for 694.07 taken Au Qtr 1981, Au Qtr 1982, or Au Qtr 1983.
640 Sociology of Everyday Life U G 5
A basic course in ethnomethodology; a survey of the basic literature; study of the taken-for-granted, verbal and non-verbal features of social interaction; involves making observations and descriptions.
Prereq: 487 and 488, or grad standing.
649 Principles of Multiple Regression U G 5
Assumptions, principles, and applications of the multiple regression model in sociological practice; basic model, dummy variables, and special functional forms.
Prereq: 549 or 650 or equiv. Not open to students with credit for 844.09 Sp Qtr 1996.
651 Approaches to Sociological Inquiry U G 5
Theory and practice in essentials of the research process; comparison of alternative approaches and design models; questionnaire construction, interview techniques, and related problems.
Project. Prereq: 649 or equiv, or permission of instructor.
652 Sociological Survey Research Methods I U G 5
Design of sociological survey research: question format, questionnaire design, alternative modes of administration, etc; hands-on practice in Computer Assisted Telephone Interviewing (CATI).
Prereq: 10 cr hrs in social or grad standing.
653 Sociological Survey Research Methods II U G 5
Administration and analysis of sociological surveys; emphasis on development, administration, and analysis of survey data.
Prereq: 652 or written permission of instructor.
655 Sociology of Sport U G 5
Sport from a sociological perspective: relationship of sport to social institutions; socialization into sport; stratification within sports; sport and small group analysis.
Prereq: 487 and 488, or grad standing. Not open to students with credit for 555.
660 Comparative Social Organization U G 5
A comparative analysis of organizational characteristics and functioning in different cultural settings.
Prereq: 487 and 488, or grad standing.
662 Small Groups U G 5
Analysis of group structure and processes; examination of roles, interpersonal structure, leadership; observation of groups in laboratory and non-laboratory settings.
Prereq: 487 and 488, or grad standing. Not open to students with credit for 661 or 772.
663 Theories of Formal Organization U G 5
Concepts and theories of formal social organization, including internal organizational structure, inter-organizational relations, and super-organization level structure.
Prereq: 487 and 488, or grad standing.
664 Public Organizations U G 5
Introduction to theory and research in public (government) organizations, exploration of behavior of these organizations, and examination of their role in the policy process.
Prereq: 487 and 488, or grad standing.
665 Political Sociology U G 5
Examination of structures, functions, and processes of change, of models and building blocks, and of social contexts of power and dynamic forces affecting political systems.
Prereq: 487 and 488, or grad standing.
667* Sociology of Elites U G 5
Empirical studies of the "higher circles" in the United States; reviewing studies in the upper class, bourgeoisie, ruling class, and specialized elites.
Prereq: 487 and 488, or grad standing.
670 Topics in Sociology U G 5
Examination of selected current topics of interest to sociologists; topics vary by section and instructor.
Au Qtr. 2 2-hr cl. Prereq: 487 and 488, or grad standing. Repeatable to a maximum of 15 cr hrs.
A - Gender Discrimination
Not open to students with credit for Wom Sids 670. This topic is not repeatable. Cross-listed in Women's Studies.
671 Population Studies I: Theory, Substance, and Techniques U G 5
Survey of population studies covering sources of demographic data, mortality, and fertility.
Prereq: 487 and 488, or grad standing. Not open to students with credit for 550.
672 Population Studies II: Theory, Substance, and Techniques U G 5
Continuation of survey of population studies covering models of population growth, population theories, migration, population estimations and projections, population problems, and policy decisions.
Prereq: 671 and Math 152 or equiv recommended. Not open to students with credit for 751.
673 Topics in Criminology U G 5
Examination of selected current topics of interest in crime and justice; topics vary by section and instructor.
Au Qtr. 2 2-hr cl. Prereq: 487 and 488, or grad standing. Repeatable to a maximum of 15 cr hrs.
A - Classification and Prediction in Criminology and Corrections
B - Social Aspects of Capital Punishment
680 Sociology of Changing Life Styles U G 5
An in-depth look at some emerging life style patterns, such as dual-career marriages, childless marriages, single-parent families, blended families, singleness, cohabitation, etc.
Prereq: 487 and 488, or grad standing.
693 Individual Studies
Su, Au, Wi, Sp Qtrs. Prereq: 20 cr hrs in sociol. or grad standing and permission of instructor. Repeatable by permission of instructor. This course is graded S/U.
694 Group Studies U G 3-5
Au, Wi, Sp Qtrs. Prereq: 487 and 488, or grad standing. Repeatable to a maximum of 15 cr hrs for each divisional subdivision. Topics vary each qtr offered.
694.01 Sociological Theory
694.02 Social Organization
694.03 Medical Sociology
694.04 Criminology and Criminal Justice
694.05 Sociology of Education
694.06 Race/Ethnic/Minority Relations
694.07 Social Psychology
694.08 The Family
694.09 Research Methodology
694.10 Urban/Community/Ecology
694.11 Labor Markets/Economy and Society
694.12 Political Sociology
694.13 Population/Demography
694.14 Gender
694.15 Unclassified
697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.
698 Study Tour U G 1-15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.
698.01 Domestic
698.02 Foreign
General Prerequisites for Courses Numbered 700
Unless otherwise indicated, the prerequisites for 700-level courses are grad standing or permission of instructor.
703 Advanced Single Equation Techniques G 5
Techniques of analysis for examining nominally measured dependent variables, and treatment of error structures that are heteroskedastic or correlated across cases.
Prereq: 649, grad standing, or permission of instructor.
704 Qualitative Methods in Sociology G 5
A survey of qualitative approaches to social research, including participant observation, intensive interviewing, and archival/documentary analysis.
Fieldwork. Prereq: Grad standing. Not open to students with credit for 648.
705* Construction and Verification of Theory G 5
The actual practice of theory construction and its underlying logic.
Project. Prereq: 487 or equiv, or grad standing, or permission of instructor. Not open to students with credit for 704.01. Repeatable to a maximum of 10 cr hrs.
706 Experimental Research Methods U G 5
Survey and analysis of research designs employing experimental methods to study human relations in various settings; business/industry, sports recreation, home/family life, etc. Prereq.: Grad standing or permission of instructor.

707 Multi-Equation Quantitative Models G 5
A survey of advanced problems in the multivariate analysis of sociological data; topics covered include elaboration and specification, causal inference in nonexperimental research and path analysis. Prereq.: 549 or 650 or equiv, or grad standing. Not open to students with credit for 704.0. Repeatable to a maximum of 10 cr hrs.

708 Problems in Qualitative Analysis G 5
Problems and techniques of non-quantitative data analysis including case studies, participant observation, field diary, autobiography, and historical records. Prereq.: 648 or 704.

709 Historical Sociology G 5
Assessment of major studies in historical sociology by focusing on their internal logic, the supporting evidence, and the subsequent research. Prereq.: 648 or 704.

710 Design and Analysis of Quantitative Sociological Research G 5
Problem formulation, hypothesis testing, argumentation from data, and writing for professional audiences; research practice leading to a research project. Sp Qtr. Prereq.: 651.

711 Seminar on Sociology of Work G 5
A survey of selected topics in sociology of workplace relations; control, administration, leadership, and occupations; theoretical approaches to the study of workplace relations. Not open to students with credit for 811.

718 Advanced Criminology G 5
A critical study of the most important aspects of criminology. Prereq.: Grad standing or permission of instructor.

720 Family, Work, and Inequality G 5
Examination of recent research and theory in sociology of the family, with emphasis on the linkages among family, work, and inequality. Prereq.: Grad standing, or permission of instructor.

721 Macrosociological Perspectives and Research on Crime G 5
Examination of structural crime theory and research focusing on the logic of macro-level inquiry, analysis of major theoretical frameworks and review of contemporary research. Sp Qtr. 2 2-hr cl. Prereq.: Grad standing or permission of instructor.

722 Microsociological Perspectives and Research on Crime G 5
Examination of microsociological perspectives on the etiology of crime and delinquency providing a survey of the major theories and empirical research on the theories. Au Qtr. 2 2-hr cl. Prereq.: Grad standing or permission of instructor.

735 Sociology of Gender G 5
An examination of current theory and research on the sociology of gender through extensive readings. Prereq.: Grad standing or permission of instructor. Not open to students with credit for 602.

742 Human Ecology G 5
Analysis of the problem of urban structure from the ecological perspective. Not open to students with credit for 842.

747 Theories of Social Change G 5
Analysis of theoretical traditions in the study of social change, and methods of constructing synthetic theories of change. Prereq.: 682 or 782 or equiv.

748 Comparative Methods in Sociology G 5
Basic review of methods of comparative analysis as used in the study of social change. Prereq.: 651.

752 Principles and Techniques of Scale Construction G 5
Approaches and techniques in the development and testing of social measurement instruments. Prereq.: 549 or equiv or Soc Work 540.

754 Demographic Analysis U G 5
An exposition of census data and vital statistics, demographic rates, life tables, cohort analysis, and similar elementary techniques and data sources in demography. Wi Qtr. S U. Prereq.: 1 course in general statistics. Not open to students with credit for 619.

755 The Social Context of Human Fertility G 5
A critical and methodological analysis of fertility, with special emphasis on the social context of reproductive behavior in American society.

756 Migration and Social Mobility G 5
Theories and models of population mobility; determinants and consequences of the migration process; policy implications of rural-urban migration.

757 Seminar on the Life Course G 5
Introduction to the life course as a theoretical orientation, methodology, and field of study within sociology. Prereq.: Grad standing or permission of instructor.

760 International Inequality and Underdevelopment G 5
Sociological theories of development and research on issues in comparative development in the global system. Prereq.: 10 cr hrs in social or grad standing.

761 Social Stratification G 5
A survey of major theories, issues, and empirical literature on societal stratification and inequality with particular focus on the United States. Not open to students with credit for 661.

762* Comparative Social Inequality G 5
Using historical and cross-cultural approaches, two aspects of social inequality are examined: class relations and the distribution of goods.

766 Advanced Sociology of Labor Markets and Occupations G 5
Theory and research covering labor market segmentation; occupational and organizational perspectives on markets; work authority and local markets; markets as structures; market effects on worker outcomes.

770 Individual in Society G 5
Analysis and synthesis of the major theories and findings of social psychology.

771 Symbolic Interaction G 5
Analysis of the relationship between the individual and the social structure; particular reference paid to the symbolic interaction orientation.

777 Comparative Political Economy G 5
The comparative analysis of the state in contemporary economic systems: the politics of economic policies; the welfare state; and industrial development policies.

780 Racial and Ethnic Differentiation G 5
An analysis of the origin, persistence, adaptation and change of systems and racial and ethnic differentiation.

782 Earlier Developments in Sociological Theory G 5
Analysis of classical systems and their representatives, e.g., positsitivistic social evolutionism (Comte, Spencer, Durkheim), historical materialism (Marx-Engels), and humanistic idealistic reaction (Toennies, Simmel, M. Weber). Prereq.: Grad standing. Not open to students with credit for 682.

H783 Honors Research U 1-5
A conference-thesis course; subject matter will vary depending upon the student's topic. Su, Au, Wi, Sp Qtr. Arr. These courses are graded S/U.

H783.01 Sociology
Prereq.: 4th yr standing with a grade of A in at least half of the social courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in sociol. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs, including or hrs earned in H783.

H783.02 Criminology and Criminal Justice
Prereq.: 4th yr standing with a grade of A in at least half of the criminal and/or social courses and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. At least 2 qtrs are required of candidates for the degree BA with distinction in criminal. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 10 cr hrs, including or hrs earned in Criminal H783.
784 Later Developments in Sociological Theory G 5
Analysis of systematic orientations, e.g., social action (Znaniecki, MacIver, Parsons), functionalism (Parsons, Merton), conflict (Dahrendorf, Coser), social exchange (Blau), ethnomethodology (Garfinkel), newer structuralism (Levi-Strauss).
Prereq: Grad standing. Not open to students with credit for 683.

790 Social Organization of the Community G 5
An examination of the nature, structures, processes, and trends of social organization of modern communities.

792 Structural Sociology G 5
Key concepts, issues, recent trends in the study of social structure with special emphasis on formal social organizations, social stratification, comparative social systems, groups and research methods.
Au Qtr. 5 cl. Prereq: Grad standing in sociology.

General Prerequisites for Courses Numbered 800
Unless otherwise indicated, the prerequisites for 800-level courses are 30 qtr hrs in the same discipline at the 800 level or higher, of which 15 hrs must be at the 700 level.

800 Proseminar in Sociology G 2
Each week an area of specialization within sociology will be discussed by a professor whose major interest is in that area; provides an overview of special topics and current issues.
Repeatable to a maximum of 6 cr hrs. Open only to 1st year grad students in sociol. This course is graded S/U.

802 Teaching Sociology G 3
Designed to prepare sociology graduate students to teach independent sections of basic sociology classes.
Sp Qtr. 1 3-hr cl. Prereq: Grad standing in sociol or permission of instructor. This course is graded S/U.

820 Seminar in the Sociology of Education G 5
Special problems will be considered in different quarters, including urban education, student movements, bureaucratic-professional problems, school-community relations, and innovation.
Repeatable to a maximum of 10 cr hrs.

830 Seminar in Medical Sociology: Problems in the Sociology of Health Organization G 5
Analysis of theory and research bearing upon the role of medicine in society and the health organizations on national, community, and institutional levels.

837 Seminar in Public Opinion and Political Sociology G 5
Selected problems in the study of opinions and opinion climates, with special emphasis on their relation to elections and political institutions in a cross-national context.
Prereq: Grad standing or permission of instructor.

841 Sociology of Urban Sub-Communities G 5
Examination of society and culture of sub-communities such as ethnic and racial ghettos, suburbanization, generalization about the patterns of integration with larger systems.

848 Seminar in the Sociology of Religion G 5
An analysis of selected contemporary problems in the sociology of religion; religious organization and involvement.

850 Seminar in Sociological Research Methods G 1-5
Special topic seminars in research methodology. Repeatable to a maximum of 30 cr hrs.

859 Practicum in Sociological Research G 1-15
Supervised practical experience in the independent execution of sociological research, the application of appropriate analytical techniques, and preparation of research reports.
Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.

862 Seminar in Complex Organizations G 5
Analysis of bureaucratization, structure, boundary problems, resource allocation, organizational change and conflict.

864 Seminar: Organizational Environments G 5
Theory and analysis of organization-environment relations, inter-organizational relations, and the structure of social environments.
Prereq: 603 or equiv.

882 Systematic Social Theory in Progress G 5
Examination of the logical structure and empirical status of current and emerging theories.

884 Seminars in Sociology
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 15 cr hrs for each decimal subdivision.

884.01 Sociological Theory G 1-5
884.03 Social Organization and Planning G 1-5
884.04 Medical Sociology G 1-5
884.06 Criminology and Criminal Justice G 1-5
884.07 Social Psychology G 1-5
884.08 The Family G 1-5
884.10 Research Methodology G 1-5
884.11 Labor Markets/Economy and Society G 1-5
884.12 Political Sociology G 1-5
884.13 Population/Economy G 1-5
884.14 Gender G 1-5
884.15 Unclassified G 1-15

888 Seminar in the American Family G 1-5
An examination of relevant issues, trends, and problems with emphasis on theoretical orientations and research findings.

998 Research in Sociology: Thesis G Arr
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research in Sociology: Dissertation G Arr
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. These courses are graded S/U.

999.04 Criminology and Criminal Justice
999.06 Race/Ethnic/Minority Relations
999.10 Urban/Community/Ecology
999.11 Labor Markets/Economy/Society
999.12 Political Sociology
999.13 Population/Economy
999.14 Gender
999.15 Unclassified

Soil Science

210 Kottman Hall, 2021 Coffey Road, 292-2265

300 Soil Science
Prereq: Chem 101 or 121. This course is available for EM credit. NS Adm Cond course. BER/GEC/LAP course.

300.01 Soil Science U 3
Introduction to soil physical, chemical, and biological properties related to land use, environmental quality, and crop production. Eckert.
Au, Su, Wi. Qtrs. 3 cl. Not open to students with credit for Agromony 240.

300.02 Soil Science Laboratory U 2
Observation and quantitative determination of soil properties. Bigham. Au, Wi. Qtr. 1 cl, 1 2-hr lab. Prereq or concur: 300.01. Not open to students with credit for Agromony 240.

442 Soil Management U 5
A consideration of the necessity for conserving our soil resource. Emphasis on processes active in erosion and management practice to sustain productivity and maintain environmental quality. Smock.
Wi Qtr. 5 cl. Prereq: 300.01 or Agromony 240. Not open to students with credit for Agromony 442.

494 Group Studies U 3-5
Selected topics in soil science.
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs.

540 Urban and Sports Turf Soils U G 3
Soil science relevant to urban use, including problems associated with urban soil, urban and sports turf soil design, and playability of sports turf soils. McCoy.
Sp Qtr. 3 cl. Prereq: 300.01 or Agromony 240 or permission of instructor. Not open to students with credit for Agromony 540.

550 Pedology U G 5
A comprehensive examination of soil morphology, study and application of soil taxonomy, processes active in soil formation, and distribution of soil classes over the earth's surface. Smeek.
Sp Qtr. 3 cl, 1 2-hr lab and field trips. Prereq: 300.01 and 300.02 or Agromony 240. Not open to students with credit for Agromony 550.
580.01 Soil Fertility and Fertilizers U G 3
Principles of soil fertility, plant nutrition, and fertilizer management; environmental considerations and low input concepts in soil fertility. Eckert.
Wi Qtr. 2 cr. Prereq: 200.01 or Agronomy 240. Not open to students with credit for Agronomy 580.01.

593 Individual Studies U G 3 or 5
Special problems in soil science not included in regular courses.
Su, Au, Wi, Sp Qtrs. Prereq: 2.50 cumulative pt-hr ratio and written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded SU.

643 Soils of the Tropics U G 3
Review of soil resources of the tropics and their management based on climate, vegetation, soil types and their geographic distribution, soil properties, traditional and improved soil management systems. Calhoun.
Au Qtr. 3 cr. Prereq: 300.01 or Agronomy 240. Not open to students with credit for Agronomy 643.

650* Advanced Soil Classification Morphology and Genesis U G 5
Theory and principles of soil classification schemes emphasizing the 7th Approximation; classification and genesis of major soils of the world; methods to establish parent material homogeneity and indices of soil weathering.
Wi Qtr. 4 cr, 1-2 hr lab; and 3 2-hr labs or 3 1-day field trips ar per qtr. Prereq: 350 or Agronomy 350 and 10 or cr hrs from the following: Soil Sci 442 or Agronomy 442, Geol Sci 550, 650. Not open to students with credit for Agronomy 650.

671 Soil Physics U G 5
A study of the physical makeup and properties of soil, including structure, thermal relationships, consistency, plasticity, water, and their relationships. Lai.
Wi Qtr. 3 cr, 2-2 hr labs. Prereq: 442 or Agronomy 442, Physics 131, Math 151. Not open to students with credit for Agronomy 671.

680 Soil Chemistry U G 5
Introduction to chemical processes in soils and their application in nutrient cycling, plant nutrition waste disposal, acid rain, fate of pesticides, and heavy metals.
Sp Qtr. 4 cr, 1-2 hr lab. Prereq: 300.01 and 300.02 or Agronomy 240 and Chem 123. Not open to students with credit for Agronomy 680.

693 Individual Studies U G 3 or 5
Special problems in soil science not included in regular courses.
Su, Au, Wi, Sp Qtr. Prereq: 2.50 CP and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded SU.

694 Group Studies U G 1-5
Discussion of selected topics in soil science.
Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

750* Soil Mineralogy U G 5
Theory and application of methods for analyzing minerals in soil environments, including X-ray, thin section, electron optical, thermal, and wet chemical techniques. Bigham.
Sp Qtr. 3 cr, 2 2-hr labs. Prereq: 15 cr hrs selected from: 300.01 or Agronomy 240, 250 or Agronomy 250, 680 or Agronomy 680, Geol Sci 121, 212, 201, 203, Chem 121-123, 211. Not open to students with credit for Agronomy 750.

760 Soil Biochemistry U G 4
Soil biochemical techniques, elemental transformations, biologically active compounds, pesticide metabolism, and fate of genetic materials in soils. Dick.
Sp Qtr. 2-2 hr cr. Prereq: 300.01 or Agronomy 240, Chem 231, Biochem 511. Not open to students with credit for Agronomy 760.

772* Thermodynamics of Soil Solution
772.01 Chemical Equilibrium and Kinetics in Soils U G 3
A study of the thermodynamics of precipitation-dissolution, electrochemical, and ion-exchange reactions in soils and sediments. Traina.
Wi Qtr. 3 cr. Prereq: Physical chemistry or permission of instructor. Not open to students with credit for Agronomy 772.01.

772.02 Thermodynamics and Kinetics of Soil Solutions: Laboratory U G 2
An experimental approach to thermodynamics of soil solutions.
Wi Qtr. 2-3 hr lab. Prereq or concuss: 772.01 or Agronomy 772.01 or permission of instructor. Not open to students with credit for Agronomy 772.02.

8711* Advanced Soil Physics G 3
Moisture, gaseous, and thermal processes and regimes in vegetated soils and their influences on plant growth. Lai.
Wi Qtr. 3 cr. Prereq: 671 or Agronomy 671 and permission of instructor. Not open to students with credit for Agronomy 871.

572 Surface and Colloid Chemistry of Soils G 3
A study of the surface and colloid chemistries of soils, sediments, and reference mineral systems. Traina.
Wi Qtr. 2 1/2-hr cr. Prereq: 772.01 or 772.02 or Agronomy 772.01 or Agronomy 772.02 or permission of instructor. Not open to students with credit for Agronomy 872.

880 Seminar G 1
Discussion of current problems in soil science.
Au, Sp Qtr. 1 cr. Repeatable to a maximum of 6 cr hrs.

993 Individual Studies G 3 or 5
Special problems in soil science not included in regular courses. Eckert-Coordinator.
Su, Au, Wi, Sp Qtr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. These courses are graded SU.

993.01 Soil Science Instruction
993.02 Special Problems

999 Research G Arr
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded SU.

Spanish
269 Conz Hall, 1841 Millikin Road, 269-4958
Students studying foreign languages at the elementary and intermediate levels typically take the sequence of courses numbered 101-102-103-104 (including the decimal subdivisions such as 101.51, etc.) and then move on to advanced courses. Students who need to satisfy the Arts and Sciences foreign language requirement must demonstrate competence at the 104 level. Spanish 101-201 and 401-403 are also offered every Au, Wi, and Sp Qtrs. through The Ohio State University Elementary Spanish Language Program in Guernica, Morelos, Mexico.
Information concerning frequency and quarte(s) of offering, if not specified, may be obtained by contacting the department.

100 Spanish for Communication U 3
Designed for students who wish to refresh or recover oral Spanish skills, or for highly motivated students who have never studied Spanish and wish to develop basic survival Spanish skills.
Su, Au, Wi, Sp Qtrs. 2 72-min cr. Does not count toward foreign language requirement. Not open to Spanish majors and minors or students with credit for Spanish 101 or above, except for Spanish 150 and 151.

101 Elementary Spanish I
Introduction to Spanish; development of listening, reading, speaking, and writing skills.
Su, Au, Wi, Sp Qtr. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 2 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Adms Cond courses.

101.01 Classroom Track U 5
Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102 Elementary Spanish II
Continued study of Spanish; development of reading, listening, speaking, and writing skills.
Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Adms Cond courses.

102.01 Classroom Track U 5
Prereq: 101.01. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.

102.65 Intensive Spanish for Review I U 5
Intensive review of basic vocabulary, structures, and skills needed for entry into 103.
2 2-hr cr and 1-hr cr per lab. Prereq: 2 or more years of high school Spanish and placement at 101 level. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 101.01 or 102.01.

103 Intermediate Spanish I
Continued study of Spanish; development of listening, reading, speaking, and writing skills; readings based on Spanish culture and literature.
Su, Au, Wi, Sp Qtrs. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses.
103.01 Classroom Track U 5
Prereq: 102.01 or 110. Students must register for and complete 5 or hrs during the qr. This course is available for EM credit.
103.66 Intensive Spanish for Review II U 5
2 3-hr cl and 1-hr cr lab. Prereq: 101.01 of 5 cr hrs of 101.51, or 3 more yrs of high school Spanish and placement into 102 by placement exam. Not open to native speakers of Spanish through regular course enrollment or EM credit, or to students with credit for 102.01, 102.66, or 103.01.
104 Intermediate Spanish II U 5
Reading of Spanish short stories, plays, and novels with attention to literary appreciation; development of basic language skills; conducted in Spanish.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 103.01 or 103.06 or equiv. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with credit for 104. This course is available for EM credit. GEC for lang course.
H104 Honors Intermediate Spanish II U 5
Intensive, intermediate Spanish for potential Spanish majors, minors, and highly-motivated students in other areas of study; emphasis on development of proficiency in speaking and writing Spanish and knowledge of Hispanic cultures.
Au, Wi, Sp Qtrs. 5 cl. Prereq: 103.01 or 103.06 or equiv. and permission of dept. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with credit for 104. Upon successful completion of H104, students may enroll in 401, rather than 102. GEC for lang course.
110 Intensive Elementary Spanish U 5 or 10
Intensive introduction to Spanish grammar, vocabulary, listening, speaking, reading, and writing; equivalent to 101.01 and 102.01.
Su, Au, Wi, Sp Qtrs. 10 cl. Prereq: Permission of dept. Not open to students with credit for 102 or to native speakers of Spanish through regular course enrollment or EM credit. Students with credit for 101 or the equiv may not register for more than 5 hrs. GEC for lang course.
111 Intensive Intermediate Spanish U 5 or 10
An intensive course that combines the content of 103 and 104, continuing study of Spanish grammar vocabulary, listening, speaking, reading, and writing.
Su, Au, Wi, Sp Qtrs. 5 2-hr cl. Prereq: 110 or 102.01 or 102.66, or equiv with written permission of instructor. Not open to students with credit for 104 or 104 decimal subdivisions, or to native speakers of Spanish through regular course enrollment or EM credit. Students with credit for 103.01 may not register for more than 5 hrs. GEC for lang course.
150 Culture and Literature of Spain U 5
Introduction to the principal developments of the culture of Spain through literature, art, music, film, and folklore.
2 2-hr cl, 1-hr cr rec. GEC arts and hums cultures and ideas course.
151 Introduction to Latin American Culture and Literature U 5
Introduction to the culture of Spanish America and Brazil through literature, art, music, film, and folklore.
2 2-hr cl, 1-hr cr rec. GEC arts and hums cultures and ideas course.
201 Intermediate Spanish Communication Skills U 5
Intensive practice in oral and written Spanish, based on literary and periodical texts.
Su, Au, Wi, Sp Qtrs. 5 cl. Prereq: 104. Not open to native speakers of Spanish through regular course enrollment or EM credit. This course is available for EM credit.
250 Fact and Fiction: A Reading Course in Spanish U 4
Reading strategies and reading practice based on authentic Spanish texts, both journalistic and literary.
2 2-hr cl. Prereq: 104 or 111.
293 Individual Studies U 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Written permission of dept. Repeatable to a maximum of 15 cr hrs. This course is graded SU.
294 Group Studies U 1-15
Prereq: Written permission of dept. Repeatable to a maximum of 30 cr hrs.
302 Spanish Conversation U 3
Practice in speaking Spanish; vocabulary building, basic syntactic structures, pronunciation.
Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 201 or permission of instructor. Not open to students with credit for 402 or 632, or to native speakers of Spanish through regular course enrollment or EM credit.
320 Don Quixote in Translation U 5
Introductory critical reading of Don Quixote in English.
2 2-hr cl. Credit does not count toward a major in Spanish. GEC arts and hums lit course.
321 The Spanish Don Juan Theme in the Theatre U 5
Introduction to the Don Juan theme from its origins in Renaissance Spain, through different versions, to the 20th century.
2 2-hr cl. Credit does not apply toward a major in Spanish. GEC arts and hums lit course.
322 Spanish Society and the Arts U 5
Introduction to Spanish art and its relationship to society, from Goya to Toril: a visual approach to culture.
2 2-hr cl. GEC arts and hums VPA course.
330 Re-inventing America U 5
Introduction to visual and verbal representation of Latin American multi-ethnic cultures through literature and visual arts; emphasis on construction of American identities and nations.
2 2-hr cl. Credit does not count toward a major in Spanish. GEC arts and hums VPA course.
331 Caribbean Cultures U 5
The analysis of Caribbean societies and cultures; analysis of texts to unravel the cultural processes of creolite, negritude, cannibalism.
2 2-hr cl.
401 Review Grammar U 4
Review of major grammatical principles, with extensive oral and written practice.
Su (1st term), Au, Wi, Sp Qtrs. 2 2-hr cl. H401 (honors) may be available to students enrolled in an honors program or by permission of instructor. Prereq: 201, H104 or permission of instructor.
403 Intermediate Spanish Composition U 4
Spanish prose forms and practice in writing descriptive, narrative, and expository compositions.
Au, Wi, Sp Qtrs. 2 2-hr cl. H403 (honors) may be available to students enrolled in the honors program or by permission of department. Prereq: 401. Not open to native speakers of Spanish through regular course enrollment or EM credit.
404 Spanish Pronunciation U 3
Practice with corrective exercises; some attention to problems of teaching pronunciation.
Au, Wi, Sp Qtrs. 4 cl. Prereq: 401. Not open to students with native pronunciation.
406 Intermediate Business Spanish U 5
An introduction to business Spanish with emphasis on business terminology, commercial transactions, and international procedures.
2 2-hr cl. Prereq: 403. Taught in Spanish.
450 Introduction to the Study of Literature and Culture in Spanish: Reading Texts U 4
Strategies for reading literary and cultural texts from Spain and Spanish America.
Su, Au, Wi, Sp Qtrs. 2 2-hr cl. H450 (honors) may be available to students enrolled in the honors program or by permission of instructor. Prereq: 403.
498* Study Tour U 15
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.
498.01 Domestic
498.02 Foreign
551 Masterpieces of Spanish Golden Age Literature U G 5
Introductory critical study of major literary works from the 16th and 17th centuries in Spain.
2 2-hr cl. Prereq. 450.
552 Masterpieces of Modern Spanish Literature U G 5
Introductory critical study of major literary works from the 19th and 20th centuries in Spain.
2 2-hr cl. Prereq. 450.
555 Indigenous and Colonial Literatures of Spanish America U G 5
Introductory critical study of issues and processes in the formation of indigenous and colonial expression through 19th century regional discourses.
2 2-hr cl. Prereq. 450.
556 Modern Spanish American Literature U G 5
Introductory critical study of issues and processes in Spanish American writing from Modernism through the 20th century.
2 2-hr cl. Prereq. 450.
560 Introduction to Spanish American Culture U G 5
Major elements in the culture of the peoples of Spanish America.
2 2-hr cl. H560 (honors) may be available to students in the honors program or by permission of dept. Prereq: 450.

561 Introduction to the Culture of Spain U G 5
Major developments in the culture of Spain.
2 2-hr cl. H561 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 450.

571 Basic Spanish for Graduate Students G 5
Designed primarily for students who have no formal preparation in Spanish covering basic grammar and vocabulary.
Au Qtr. This course is also offered through the Ohio State University Elementary Spanish Language programs abroad: Au, Wi, Sp Qtrs in Cuernavaca, Morelos, Mexico. Su Qtr in Quito Ecuador. 3 cl. Prereq: Grade of C or above in 571, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hrs required for the master's or doctoral degree. No audit. Repeatable to a maximum of 9 or hrs. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a dictionary reading knowledge in fulfillment of Ph.D. language requirement.

572 Spanish for Research I G 3
Wi Qtr. This course is also offered through the Ohio State University Elementary Spanish Language programs abroad: Au, Wi, Sp Qtrs in Cuernavaca, Morelos, Mexico. Su Qtr in Quito Ecuador. 3 cl. Prereq: Grade of C or above in 571, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hrs required for the master's or doctoral degree. No audit. Repeatable to a maximum of 9 or hrs. Satisfactory completion of this course (grade of A or B) may be accepted by the student’s dept as evidence of a thorough reading knowledge in fulfillment of Ph.D. language requirement.

573 Spanish for Research II G 3
Sp Qtr. This course is also offered through the Ohio State University Elementary Spanish Language programs abroad: Au, Wi, Sp Qtrs in Cuernavaca, Morelos, Mexico. Su Qtr in Quito Ecuador. 3 cl. Prereq: Grade of A or B in 572, or equiv preparation demonstrated by a placement test. Credit does not apply to the minimum number of hrs required for the master's or doctoral degree. No audit. Repeatable to a maximum of 9 or hrs. Satisfactory completion of this course (grade of A or B) may be accepted by the student's dept as evidence of a thorough reading knowledge in fulfillment of Ph.D. language requirement.

580 Latin American Film U G 5
Study of Latin American film; special attention is paid to the relationship between film and the society in which it is produced.
Wi Qtr. 2 2-hr cl. Prereq: 450.

581 Spanish Film U G 5
Study of Spanish film; special attention is paid to the relationship between film and the society in which it is produced.
2 2-hr cl. Prereq: 450.

601 Modern Spanish Syntax U G 5
Study of modern Spanish grammar; modern tendencies in syntactic analysis.
5 cl. Prereq: 403.

603 Advanced Spanish Composition U G 5
Analysis of different prose styles and practice in writing fluent Spanish compositions.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 450 and jr or sr standing. Repeatable to a maximum of 6 or hrs. GEC third writing course.

604 Spanish Phonetics U G 5
Analysis of the phonological structure of Spanish and a comparison with English; practical problems of teaching pronunciation.
2 2-hr cl. Prereq: 404.

605 Advanced Business Spanish U G 5
An in-depth study of the Hispanic economic, social, and cultural environment as it relates to business.
2 2-hr cl. Prereq: 406 or permission of instructor.

610 Contrastive Structures of Spanish and English U G 5
Phonetics, phonemics, morphology, and syntax of Spanish contrasted with English.
2 2-hr cl. Prereq: 404.

613 Advanced Spanish Composition for Native Speakers U G 5
Development of the ability to organize and express ideas in written Spanish; cultural component.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: Several courses in Spanish grammar in the U.S. or in a Spanish-speaking country. Not open to students studying Spanish as a second (foreign) language. Designed for students of Hispanic culture or heritage who have no serious problems with spoken Spanish but who need further practice writing.

630 Senior Seminar in Spanish Linguistics U G 5
Intensive study of a major topic in Hispanic linguistics; topic varies, for example: the Spanish pronoun system, American Spanish dialectology, Spanish orthography.
Au Qtr. 2 2-hr cl. Prereq: 601, or 604, 603, and 610, or Linguis 201. Repeatable to a maximum of 15 or hrs.

650 Senior Seminar in Spanish or Spanish American Literature U G 5
Intensive study of a major author, literary work, or theme; topic varies, for example: Cervantes, Spanish literature of the Civil War, novels of the Mexican Revolution.
2 2-hr cl. Prereq: 551 or 562, 555 or, 556, and 603. Repeatable to a maximum of 15 or hrs. Required for Spanish majors.

680 Senior Seminar in Hispanic Culture U G 5
Intensive study of a major theme or problem in Hispanic culture; topic varies, for example: Post-Franco Spain, Latin American Revolution thought.
2 2-hr cl. Prereq: 560 or 561, and 603. Repeatable to a maximum of 15 or hrs.

690 Spanish in Ohio: An Experiential Course for Selected Majors U G 5
Interaction with Hispanic communities in Ohio; intensive and extensive practice with Spanish as spoken by native speakers from the U.S. and abroad.
1 2-hr cl. plus 100 field contact hours outside class. Prereq: 560 or 561 or permission of instructor. Not open to native Spanish speakers unless their secondary education was completed in the United States. Students will pay travel costs, if required.

693 Individual Studies U G 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs. This course is graded SU.

694 Group Studies U G 1-16
Prereq: Permission of instructor. Repeatable to a maximum of 30 or hrs.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition as well as all travel and subsistence costs.

702 Introduction to Literary Analysis U G 5
Literary criticism and methods of discourse analysis; emphasis on application of critical concepts.
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor. Intended for beginning grad students; may be taken by advanced undergraduates with permission of instructor.

703 Research Methods and Design G 5
Introduction to research methods and design in Hispanic literatures and cultures.
Sp Qtr. 2 2-hr cl. Prereq: Grad standing.

730 Introduction to Spanish Linguistics U G 5
A broad introduction to Spanish linguistics: survey of Spanish data as they relate to phonological, morphological, syntactic, and semantic analysis, historical development, and sociolinguistic variations.
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

732 Spanish Syntax and Semantics G 5
Introduction to structural and semantic characteristics of Spanish in the light of recent theoretical frameworks in linguistics.
Wi Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

734 Spanish Phonology and Morphology G 5
Introduction to phonological and morphological characteristics of Spanish in the light of recent theoretical frameworks in linguistics.
Wi Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

736 History of the Spanish Language G 5
Basic concepts of historical linguistics: the major factors of change in the history of the Spanish language from Latin to the present.
Au Qtr. 2 2-hr cl. Prereq: 730 or permission of instructor.

738 Spanish Sociolinguistics G 5
Introduction to the analysis of linguistic and social factors which contribute to variation in modern Spanish.
2 2-hr cl. Prereq: 730 or permission of instructor.
739 Introduction to Medieval Spanish U G 2
Introduction to Medieval Spanish sounds, forms, constructions, and vocabulary, based on reading and linguistic comment of representative texts.
1 2-hr cl. Prereq: 404 and 601, or permission of instructor.

751 Studies in Medieval Spanish Literature U G 5
In-depth study of a major topic or problem in Medieval Spanish literature.
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

752 Studies in Spanish Golden Age Literature U G 5
In-depth study of a major topic or problem in Spanish Golden Age literature.
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

753 Studies in Spanish Literature of the 18th and 19th Centuries U G 5
In-depth study of a major topic or problem in 18th or 19th century Spanish literature.
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

754 Studies in 20th Century Spanish Literature U G 5
In-depth study of a major topic or problem in 20th century Spanish literature.
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

755 Studies in Indigenous and Colonial Spanish American Literature U G 5
In-depth study of a major topic or problem in indigenous and colonial Spanish American literature.
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

756 Studies in Independence and 19th Century Spanish American Literature U G 5
In-depth study of a major topic or problem in Spanish American literature of the independence period and the 19th century.
2 2-hr cl. Prereq: 650 or grad standing. Repeatable to a maximum of 20 cr hrs.

757 Studies in Modern Spanish American Literature U G 5
In-depth study of a major topic or problem in Spanish American literature of the modern period from approximately 1880 to 1950.
2 2-hr cl. Prereq: 650 or grad standing; permission of instructor required of undergrads. Repeatable to a maximum of 20 cr hrs.

758 Studies in Contemporary Spanish American Literature U G 5
In-depth study of a major topic or problem in contemporary Spanish American literature.
2 2-hr cl. Prereq: 650 or grad standing; permission of instructor required of undergrads. Repeatable to a maximum of 20 cr hrs.

759 Comparative Topics in Iberian and Latin American Literature U G 5
In-depth study of a major topic comparing Spanish, Spanish American and/or Lusophone literature.
2 2-hr cl. Prereq: 650 or grad standing; permission of instructor required of undergrads. Repeatable to a maximum of 20 cr hrs.

760 Topics in Spanish American Culture and Civilization U G 5
Analysis of Spanish American culture through the study of selected topics in literature, film, and the arts; topics vary.
2 2-hr cl. Prereq: 560 or permission of instructor. Open only to grad students and to ils majoring in Spanish by permission of instructor. Repeatable to a maximum of 15 cr hrs.

761 Topics in Spanish Culture and Civilization U G 5
Analysis of Spanish culture through the study of selected topics in literature, film, and the arts; topic varies.
2 2-hr cl. Prereq: 561 and grad standing, or er standing in Spanish with permission of instructor; or permission of instructor. Repeatable to a maximum of 15 cr hrs.

7783 Honors Research U 3-5
This course offers undergraduates with special aptitudes a greater opportunity to do independent study than is possible in ordinary courses. Su, Au, Wi, Sp Qtr. Conference, library or phonetics laboratory arr. Prereq: 4th yr standing with a record of A in at least half of the Spanish courses and an average of 5 in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 cr hrs. This course is graded SU.

790 Foundations of Contemporary Critical Theory U G 5
Interdisciplinary survey of the theoretical bases of the major contemporary approaches to the study of literature; readings in Marx, Freud, Derrida, Cixous, and others.
Wi Qtr. 2 2-hr cl. Prereq: Jr cr or grad standing. Cross-listed in Comparative Studies in the Humanities, English, French, German, and Italian.

792 Interdepartmental Studies in the Humanities U G 3-5
Two or more departments present colloquia on subjects of mutual interest; topics to be announced.
Prereq: Grad standing or permission of instructor(s). Repeatable to a maximum of 15 cr hrs with permission of dept.

801 Teaching Spanish at the College Level G 5
Methods and techniques for teaching Spanish language at the college level. Au Qtr. Two-wk intensive workshop preceding to beginning of qr tr. Prereq: Teaching associate in the Dept of Spanish and Portuguese or permission of instructor. Not open to students with credit for Ed-Stds 801-03. For students enrolled in this course, the minimum number of cr hrs required for graduation is increased by 5 hrs. Cross-listed in Educational Studies as 801-03.

833 Studies in Spanish Synchronic Linguistics G 5
Investigation of selected topics in synchronic Spanish linguistics (formal problems in Spanish phonology, morphology, syntax, semantics, and lexicology).
2 2-hr cl. Prereq: 732 or 734 (depending on topic), and permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in 814; individual topics not repeatable.

836 Studies in Spanish Historical Linguistics G 5
Study of selected problems of Old Spanish linguistic description and diachronic evolution of Spanish. 2 2-hr cl. Prereq: 736 or permission of instructor. Repeatable to a maximum of 20 cr hrs, including cr hrs earned in 816; individual topics not repeatable.

839 Seminar in Spanish Linguistics G 5
Collaborative investigation of specific problems in Spanish linguistics (synchronic and historical, formal, and applied topics).
1 2-hr cl. Prereq: 833 or 836 or permission of instructor. Repeatable to a maximum of 20 cr hrs, individual topics not repeatable.

851 Seminar in Medieval Spanish Literature G 5
Detailed exploration of advanced issues in Medieval Spanish literature. 2 2-hr cl. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

852 Seminar in Spanish Golden Age Literature G 5
Detailed exploration of advanced issues in Spanish Golden Age literature. 2 2-hr cl. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

853 Seminar in Spanish Literature of the 18th and 19th Centuries G 5
Detailed exploration of advanced issues in Spanish literature of the 18th and 19th centuries. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs.

854 Seminar in 20th Century Spanish Literature G 5
Detailed exploration of advanced issues in 20th century Spanish literature. 2 2-hr cl. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

855 Seminar in Indigenous and Colonial Spanish American Literature G 5
Detailed exploration of advanced issues in indigenous and colonial Spanish American literature. 2 2-hr cl. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

856 Seminar in Independence and 19th Century Spanish American Literature G 5
Detailed exploration of advanced issues in Spanish American literature of the independence period and the 19th century. 2 2-hr cl. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.

857 Seminar in Modern Spanish American Literature G 5
Detailed exploration of advanced issues in Spanish American literature of the modern period from approximately 1880 to 1950. 2 2-hr cl. Prereq: Permission of Instructor. Repeatable to a maximum of 30 cr hrs.
Speech and Hearing Science

294 Group Studies U 1-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered. Repeatable to a maximum of 10 cr hrs.

320 Principles of Phonetics U 5
Provides articulatory and acoustic descriptions of speech sounds and a comparative study of phonetic transcription systems. 4 cr, 1 rec. Not open to students with credit for 245.

340 Bio-acoustics for Speech and Hearing Science U 5
Basic principles of bio-acoustics: generation, transmission and reception of sound; neuroanatomy and neurophysiology as applied to speech production and perception. Prereq: Math 116, 130, 148, or 150; or permission of instructor. Not open to students with credit for this topic under 294. Designed for students with little previous experience in biological or physical science.

360 Observation in Speech-Language Pathology and Audiology U 5
Observation in appraisal and treatment of communication disorders. Prereq: 230. Not open to students with credit in 365.01 and 365.02. This course is graded S/U.

420 Introduction to Speech Science U 5
Anatomy and physiology of the structures involved in speech production and the acoustic characteristics of speech sounds. Prereq: 320, or equiv, and 340, or equiv and Biology 101, 102, 113, 114, H115, or H116.

430 Normal Development of Communication in Children U 5
Introduction to the development of communication in normal children.

440 Introduction to Hearing Science U 5
The anatomical properties and physiological processes of the system of hearing and balance in man and the stimulus processing capabilities of the normal auditory system. Prereq: 340, or equiv, and Biology 101, 102, 113, 114, H115, or H116; or Anatomy 199 or 200; or permission of instructor. Not open to students with credit for 345 and 456.

520 Introduction to Speech-Language Pathology U G 5
Etiology, appraisal, and management of disorders of speech and language in children and adults. Prereq: 320 or equiv, 360 or equiv, 420 or equiv, and 430, or permission of instructor.

540 Introduction to Audiology U G 5
The nature, causes, identification, and rehabilitative treatment of persons with hearing disorders. Prereq: 360 or equiv, and 440 or equiv.

General Prerequisites for Courses Numbered 600-700
A general foundation in undergraduate courses in normal and disordered communication and related sciences is assumed in addition to listed specific prerequisites. Two exceptions are 714 and 716; other exceptions at the discretion of instructor.

605 Multicultural Aspects of Communication and its Disorders U G 5
Examination of normal communicative behavior, including development, and the assessment and management of speech-language-hearing disorders of culturally and linguistically diverse populations. Prereq: Grad standing or one of the following: 230 or 430, or Linguist 201, 202, 261, or 268, or equiv.

610 Symbolic Representation in Human Communication U G 5
Complex logical problems in human communication. Prereq: 5r standing and completion of college math requirement.

670 Speech, Hearing, and Language Problems in the School U G 3
First course in the certification curriculum for school speech pathology; emphasis on program administration, interdisciplinary evaluation, and intervention. Prereq: 5r or grad standing in sph/hnm.

692 Workshops U G 1-3
Intensive study of a clinical area newly expanded within the field; geared for practicing clinicians to update information and increase skill levels. Prereq: Written permission of workshop director. Repeatable to a maximum of 12 cr hrs.

693 Individual Studies U G 1-5
Conference, library, and laboratory work. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

Speech and Hearing Science

110 Pressey Hall, 1070 Carmack Road, 292-8207
Information concerning frequency and quarter(s) of offering may be obtained by contacting the department.

230 Introduction to Communication and its Disorders U 5
Survey of the topics, methodologies, and applications of speech and hearing science in normal and abnormal communication; lectures and readings. 3 1/2 hr cl.

250 Brain Mechanisms of Language U 5
Exploration of the neurological basis of language in humans and other species; examination of language deficits caused by brain damage.
728 Early Intervention: Language and Communication Disorders of Preconversational Children with Developmental Disabilities U G 5
Intervention models for language and communication development of preconversational children and persons with developmental disabilities; theory, assessment and treatment with a focus on family and school collaboration.
Prereq: Grad standing or permission of instructor. Not open to students with credit for 553.01 and 553.03.

734 Introduction to Aural Rehabilitation I U G 5
Assessment and management of communication disorders associated with hearing loss.
Prereq: 540 or permission of instructor. Not open to students with credit for 632.

735 Hearing Aids U G 5
Electroacoustic characteristics and analysis of hearing aids; hearing aid selection, evaluation, procurement, fitting, and orientation.

737 Proseminar in Cognitive Science U G 2
An in-depth examination of the interdisciplinary field of Cognitive Science; emphasizes fundamental issues of each discipline, provides illustrations of representative research being conducted at OSU.
Prereq: Cptr/Inf 612, Linguis 612, Psych 612, or Philos 612; or permission of instructor. Repeatable to maximum of 4 cr hrs. Cross-listed in Computer and Information Science, Industrial and Systems Engineering, Linguistics, Philosophy, and Psychology.

740 Fluency: Theory and Treatment U G 5
Theories, principles, and procedures for the appraisal and treatment of persons with dysfluencies in speech.
Prereq: Grad standing in speech and hearing science or permission of instructor. Not open to students with credit for 632.

741 Voice Disorders U G 5
The role of the speech-language pathologists in the evaluation and interdisciplinary management of voice disorders and related pathologies.
Prereq: Grad standing in speech and hearing science or permission of instructor. Not open to students with credit for 659.

742 Low Incidence Voice and Resonance Disorders U G 5
Etiology, evaluation, and treatment of low incidence speech and voice disorders of the head and neck.
Prereq: 765 or equiv, and grad standing in speech and hearing science or permission of instructor. Not open to students with credit for 640.

744 Clinical Seminar in Speech-Language-Hearing Disorders G 1
Readings and discussion of topics pertinent to the assessment and treatment of communication disorders.
Each decimal subdivision repeatable to a maximum of 10 cr hrs; 0 cr hrs in excess of 10 must be approved by the Graduate Studies Committee. These courses are graded S/U.
Prereq: 744.01 Hearing Disorders
Prereq: 540 or equiv or permission of instructor.
A—Introduction to Audiology Clinic
B—Integrating Diagnostic Information and Report Writing
C—Advanced Amplification Protocols
D—Central Auditory Processing Protocols
E—Clinical Grand Rounds
F—Professional Issues
G—Contemporary Issues

744.02 Speech Language Disorders
Prereq: 3 cr hrs of speaking course work at 600 level or above, or permission of instructor.
A—Introduction to Speech-Language Pathology Clinic
B—Treatment Methodologies for Articulation and Phonology
C—Language Assessment and Intervention
D—Neurogenics
E—Special Issues
F—Professional Issues
G—Contemporary Issues

750 Assessment of Vestibular Function U G 5
Study of the techniques involved in the administration and interpretation of electronystagmography, rotation, and posturography assessments.

760 Aphasia and Related Adult Language Disorders U G 5
Language disorders resulting from brain injury in adults.
Prereq: 765 or equiv, and grad standing; or permission of instructor. Not open to students with credit fr 738.01.
761 Neurologic Motor Speech Disorder U G 5
The nature, treatment and assessment of neurologically based motor speech disorders in an interdisciplinary context.
2 2-hr cl. Prereq: 765 or equiv, and grad standing; or permission of instructor. Not open to students with credit for 736.02.

762 Traumatic Brain Injury in Children and Adults U G 5
The mechanism of traumatic brain injury, its impact on communication, and the methods of assessment and intervention.
Prereq: 765 or equiv, and grad standing; or permission of instructor.

763 Evaluation and Treatment of Dysphagia in Adults and Children U G 5
The role of the speech-language pathologist in assessment and treatment of swallowing disorders in children and adults.
2 1½-hr cl. Prereq: 765 or 624, and grad standing or permission of instructor.

765 Neurology of the Speech and Hearing Mechanism U G 5
Structure and function of the central and peripheral nervous systems as they relate to speech and hearing.
Prereq: Grad standing in speech and hearing science or permission of instructor. Not open to students with credit for 624.

766 Signals and Systems for Speech and Hearing G 5
Principles underlying the use of electro-acoustic instrumentation in the speech and hearing sciences.
Prereq: College-level algebra. Not open to students with credit for 635.02.

770 Clinical and Educational Methods in the Schools G 3
Models, strategies, methodologies, and curriculum involved in planning, implementing, and evaluating team-based instruction for students with communication, language, and learning disabilities.
Prereq or concn: 670, or permission of instructor.

775 Advanced Hearing Science G 5
The structure and function of the ear and the stimulus processing capacities of the ear as they relate to performance or tests of auditory function in normal and impaired listeners.
Prereq: 765, 766. Not open to students with credit for 757.

776 Advanced Speech Science U G 5
This course serves as a graduate introduction to speech instrumentation and speech acoustics. It addresses topics in spectrographic analysis and speech synthesis.
Prereq: 420 or equiv.

H783 Honors Research U 3-15
A program of independent study for the student with special aptitudes; individual conferences and reports.
Prereq: 4th yr standing with a grade of A in at least half of the sph/hrm courses and an average of B in the remainder; permission of the instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee. Repeatable to a maximum of 15 hrs. This course is graded S/U.

785 Research Methods I G 5
Introduction to research design and data analysis for the hearing and speech sciences.
Prereq: Grad standing.

786 Research Methods II G 5
Introduction to descriptive and inferential statistics as they are utilized in speech and hearing science.
Prereq: 785 or permission of instructor.

794 Group Studies U G 3
Prereq: Permission of instructor. Repeatable to a maximum of 20 hrs.

805 Pediatric Audiology G 5
Etiology and assessment of hearing loss in children.
Prereq: 705, 706 and 707 or permission of instructor. Not open to students with credit for 645.

806 Adult Hearing Disorders G 5
The nature, diagnosis, and treatment; recommendations of adult hearing disorders.
Prereq: 705, 706, and 707, or equivs. Not open to students with credit for 645.

815 Clinical Assessment and Training Methods for the Singing Voice G 3
An interdisciplinary course in vocal pedagogy and speech-language pathology which explores methods within each discipline for assessing and training the singing voice.
2 cl, 2 lab hrs. Prereq: Grad standing in sph/hrm (with credit for 741) or music; or permission of instructor. Not open to students with credit for Musc 815. Cross-listed in Musc.

820 Acoustic Phonetics G 3
An introduction to the acoustic characteristics of human speech sounds, the acoustic theory of speech production, and spectrographic analysis.
Prereq: 320 and Lingualit 601, or equivs. Not open to students with credit for this topic under 540 or 650.

852 Experimental Phonetics G 5
Experimental investigations of acoustic, physiological, and psychological aspects of speech.
Repeatable to a maximum of 10 cr hrs.

834 Sensory Aids G 5
Provides a working knowledge of the design and use of alternative sensory devices for hearing-impaired persons, including tactile aids, cochlear implants, and visual training aids.

835 Digital and Digitally Programmable Hearing Aids G 5
Description of true digital and analog/digital hybrid hearing aids and presentation of commercially available programmable instruments.
Prereq: 735.

844 Practicum in Communication Disorders G 1-5
Practicum with children and adults having speech, language, or hearing problems.
Prereq: Permission of instructor. Repeatable. This course is graded S/U.

845 Clinical Internship: Speech, Language, and Hearing G 12
Full-time experience in approved clinical setting to partially fulfill requirements for Plan B nonthesis option.
Prereq: Completion of 45 grad cr hrs and 40 hrs of clinical practicum. Prior approval of grad committee required. This course is graded S/U.

846 Field Experience in the Schools G 6 or 12
Major practicum experience for students pursuing certification to practice speech/language pathology in schools.
Prereq: 670 or equiv, grad standing in sph/hrm, and permission of instructor. Repeatable to a maximum of 12 cr hrs.

858 Psychoacoustics G 5
Theoretical concepts and psychophysical data relative to hearing and related laboratory experiments.

870 School Internship Seminar G 3
Special topics, management concerns, and other planned experiences relative to the school internship in speech-language pathology.
Prereq: 670 and 770, or permission of instructor. Repeatable to a maximum of 6 cr hrs.

893 Directed Doctoral Studies G 3-10
Directed, individualized areas of study for doctoral students in either the laboratory or clinical research tracks.
Conference, library, clinic &/or laboratory involvement. Prereq: Doctoral standing in sph/hrm or permission of instructor. Repeatable to a maximum of 45 cr hrs. This course is graded S/U.

900 Doctoral Proseminar in Speech and Hearing Science G 1
Advanced studies in speech and hearing science to acquaint doctoral students with departmental research. To pose possible dissertation topics, and to improve research/design skills.
1 2-hr rec every other week. Prereq: Doctoral standing in sph/hrm or permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

940 Advanced Studies in Speech and Hearing Science G 3
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

950 Seminar in Speech and Hearing Science G 3
Prereq: Permission of instructor. Repeatable to a maximum of 45 cr hrs.

998 Research in Speech and Hearing Science: Thesis G Arr
Research for thesis purposes only.
This course is graded S/U.

999 Research in Speech and Hearing Science: Dissertation G Arr
Research for dissertation purposes only.
This course is graded S/U.

Statistics
335

404 Cocolins Hall, 1958 Neil Avenue, 292-2866

130 Statistics for the Business Sciences U 4
Introduction to the basic concepts of probability and statistics; sample statistics, discrete and continuous probability distributions; confidence intervals, and estimation.
Su, Au, Wi, Sp Qu's. 4 cl. Prereq: Math 132.
135 Elementary Statistics U 5
Introduction to probability and statistics, experiments, and sampling. data
analysis and interpretation.
Su, Au, Wi, Sp Qtrs. 3 1-hr cl, 2 labs. Prereq: Math 050 or Mathematics
Placement Level S. Not open to students with credit for any of the following:
125, 145, 243, Econ 442, E9-TAP 786, Mol Gen 650, Politi Sc 685, Psych
220 or 510. Not open to Econ 670 or 671. GEC data analysis course.

145 Introduction to the Practice of Statistics U 5
Topics include probability, descriptive statistics, correlation, regression,
design of experiments, sampling, estimation, and testing; emphasis on
applications, statistical reasoning, and data analysis using statistical
software.
Au, Wi, Sp Qtrs. 3 1-hr cl, 2 labs. Prereq: Math 116 or 130 or 148 or equiv.
GEC data analysis course.

245 Introduction to Statistical Analysis U 5
Calculus-based introduction to data analysis, experimental design,
sampling, probability, and inference.
Au Qtr. 3 cl, 2 1-hr labs. Prereq: Math 152 or equiv. GEC data analysis course.

Introduction to Biostatistics
See Biostat H518.

425 Probability and Statistics I U 5
Elements of discrete and continuous probability; introduction to estimation
and testing of hypotheses.
Wi, Sp Qtrs. Prereq: Math 254 or permission of chairperson. Not open to
students with credit for 427. GEC data analysis course.

426 Probability and Statistics II U 5
Continuation of 425.
Au, Sp Qtrs. Prereq: 425. Not open to students with credit for 428.

427 Introduction to Probability and Statistics for Engineering
and the Sciences I U 3
Introduction to probability, discrete and continuous random variables,
expected value, and sampling distributions.
Au, Wi, Sp Qtrs. 3 cl. Prereq: Math 254 or permission of chairperson. Not
open to students with credit for 425. This course is not intended to stand
alone as an introduction to probability and statistics. It should be followed
by 428. GEC data analysis course.

428 Introduction to Probability and Statistics for Engineering
and the Sciences II U 3
Continuation of 427; point and interval estimation; hypotheses tests for
proportions, means, variances, and goodness-of-fit; least squares
regression.
Au, Wi, Sp Qtrs. 3 cl. Prereq: 427. Not open to students with credit for 426.

494 Group Studies U 3-5
Designed to give groups of students an opportunity to pursue special
studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a
maximum of 10 cr hrs.

520 Mathematical Statistics I U G 5
Probability, random variables, discrete and continuous distributions;
binomial, Poisson, normal, gamma (chi-square), t, F, distributions; change
of variable and moment-generating function techniques; order statistics;
limit theorems.
Au, Wi Qtrs. 5 cl. Prereq: Math 254 or written permission of chairperson.
Not open to students with credit for 620. GEC data analysis course.

521 Mathematical Statistics II U G 5
Confidence intervals; minimum variance unbiased estimation, maximum
likelihood estimation; Neyman-Pearson theorem, uniformly most powerful
tests, likelihood ratio tests, chi-square and F tests, nonparametric tests.
Sp Qtr. 5 cl. Prereq: 520. Not open to students with credit for 621.

528 Data Analysis I U G 3
Non-calculus treatment of descriptive statistics, statistical inference,
goodness of fit, use of t, X^2 in one sample situation.
Au, Wi Qtrs. 2 cl, lab hrs arr. Prereq: Permission of instructor or grad
standing. Not open to students with more than 5 cr hrs in stat.

529 Data Analysis II U G 3
Two sample tests, non-parametric one and two sample procedures,
regression analysis, one and two way analysis of variance.
Wi, Sp Qtrs. 2 cl, lab hrs arr. Prereq: 528.

530 Data Analysis III U G 4
Multiple regression models; diagnostics, inferences, and variable
selection; ANOVA with several factors, mixed models, nesting.
Sp Qtr. 4 cl. Prereq: 529 or permission of instructor.

600 Statistical Consulting I U G 2
Role of statistical consultant; enhancement of problem solving and
communication skills; development of a personal philosophy of consulting.
Wi Qtr. Prereq: 645 and permission of instructor. This course is graded S/U.

601 Statistical Consulting II U G 2
Experience is given the student in working with real data through association
with projects in the Statistics Consulting Service.
Sp Qtr. 1 1½-hr cl. Prereq: 600 and permission of instructor. This course is
graded S/U.

602 Early Start in Statistics G 5
Selected mathematical topics, including geometric series, binomial
expansion, integration by parts, Taylor series; transformation of variables,
linear algebra, basic concepts of probability.
Su Qtr. 5 cl. Prereq: Grad standing in stat.

603 Teaching of Statistics G 4
Introduction to the teaching of statistics; teaching strategies; communicating
with students; review of topics taught in Stat 133, 135, and 145, and the
computing lab.
Su Qtr. 4 cl. Prereq: Grad standing in stat. This course is graded S/U.

610 Probability for Statistical Inference G 5
Introduction to probability, random variables, and distribution theory
intended primarily for students in MAS degree program.
Au Qtr. 3 cl. Prereq: Math 548 or permission of instructor.

620 Statistical Theory I G 4
Introduction to probability, conditional probability, independence, random
variables, distribution functions, transformations, moment generating
function, common probability distributions; marginal and conditional
distributions, sampling distributions; convergence concepts.
Au Qtr. 4 cl. Prereq: Math 548. Not open to students with credit for 610.

621 Statistical Theory II G 4
Sufficiency, maximum likelihood estimation, minimum variance unbiased
estimation, Bayes estimation, decision theory.
Wi Qtr. 4 cl. Prereq: 620 or written permission of instructor.

622 Statistical Theory III G 4
Likelihood ratio tests, Neyman-Pearson theorem and uniformly most
powerful tests, confidence intervals, applications to linear models.
Sp Qtr. 4 cl. Prereq: 621.

623 Theory of Statistical Analysis G 5
Estimation, hypothesis tests, best tests, likelihood ratio tests, confidence
sets, sufficiency, efficient estimators; intended primarily for students in the
MAS degree program.
Wi Qtr. 3 cl. Prereq: 610 or 620 or permission of instructor. Not open to
students with credit for 621 or 622.

628 Statistical Practice I G 4
Computer environment; statistical computing; scientific method; overview
of statistical problem formulation and inference; foundations of stochastic
modeling; exploratory data analysis; descriptive statistics.
Au Qtr. 4 cl. Prereq or conc: 620.

629 Statistical Practice II G 4
Parametric and nonparametric inference; linear regression modeling
- inference and prediction, multiple comparisons; model validation and
improvement - diagnostics; residual analysis; transformation of variables.
Wi Qtr. 4 cl. Prereq: 628, and prereq or conc: 621.

630 Statistical Practice III G 4
Model selection; principal components; multicolinearity; discrete response
modeling; modern regression and smoothing techniques; non-linear
regression; experimental design and sampling; ANOVA and MANOVA;
pattern recognition.
Sp Qtr. 4 cl. Prereq: 629, and prereq or conc: 622.

632 Applied Stochastic Processes I U G 3
Conditioning, discrete time Markov chains, Poisson processes, branching
processes.
Wi Qtr. 3 cl. Prereq: 623 or permission of instructor.

6331 Applied Stochastic Processes II U G 3
Continuous time Markov chains, birth and death processes, renewal
processes, Queueing Theory, Brownian Motion.
Sp Qtr. 3 cl. Prereq: 632 or permission of instructor.

635 Statistical Analysis of Time Series U G 3
Time series models; estimation of the spectral density function;
transformations of time series; prediction theory applications.
Au Qtr. Prereq: 521 or 525 or 623 or permission of instructor.
641 Design and Analysis of Experiments U G 5
The linear model for experimental designs; analysis of variance; factorial experiments; and block designs.
Wi Qtr. 3 cl. Prereq: 521, 645, and knowledge of elementary linear algebra; or permission of instructor.

645 Applied Regression Analysis U G 5
Simple and multiple linear regression, diagnostics, model selection, models with categorical variables.
Au, Sp Qtrs. 3 cl. Prereq: 521 or equiv.

651 Survey Sampling Methods G 3
Sampling from finite populations, simple random, stratified, systematic, and cluster sampling designs, ratio and regression estimates; non-sampling errors.
Au Qtr. 2 cl. Prereq: 521.

655 Applied Multivariate Analysis U G 5
Matrix computation of summary statistics, geometry of sample data; multivariate normal distribution; MANOVA; principal components; discriminant analysis; topics may include factor analysis, cluster analysis, canonical correlation.
Sp Qtr. 3 cl. Prereq: 645 or equiv and knowledge of linear algebra. Some experience with computers is expected.

661 Applied Nonparametric Statistics U G 5
Nonparametric treatment of nonparametric tests, confidence intervals, estimation; topics include one- and two-sample problems, one- and two-way analysis of variance, multiple comparisons, correlation.
Su, Sp Qtrs. 5 cl. Prereq: 426 or 521 or 529 or equiv.

663* Statistical Methods in Reliability U G 5
Statistical failure models, graphical and analytic parametric estimation for censored samples, non-parametric survival function estimation, reliability of composite and repairable systems, Bayesian estimation and prediction.
Sp Qtr. 3 1/2 hr cl. Prereq: 521 or 623 or equiv.

664 Principles of Statistical Quality Control U G 5
Pareto diagrams; process control: Shewhart, CUSUM, empirical Bayes, multivariate and other control charts; economic design, process capability, Taguchi's method for off-line control; acceptance sampling.
Wi Qtr. 3 cl. Prereq: 521 or 623 or equiv.

665 Discrete Data Analysis U G 4
Two-by-two tables; cross-sectional, prospective, and retrospective studies; log linear model analysis of cross-classified data; logistic regression analysis; analysis of stratified tables.
Sp Qtr. 2 cl. Prereq: 529 or 645 or permission of instructor.

673 Monte Carlo Techniques U G 5
This course covers the Monte Carlo topics of Stat 671.
Au Qtr. 3 cl. Prereq: 425 or 520 or 525 or 529 or equiv and some knowledge of computer programming, or permission of instructor. Not open to students with credit for 671.

693 Individual Studies U G 1-5
Individual conferences, assigned readings, and reports on minor investigations.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

694 Group Studies U G 2-5
Designed to give groups of students an opportunity to pursue special studies not otherwise offered.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

720* Distribution Theory G 3
Characterizing functions, compound and contagious distributions, families and systems of distributions; some discrete and continuous distributions, characterizations.
Wi Qtr. 3 cl. Prereq: 610, 620 or permission of instructor.

721 Theory of Probability I G 4
Measure and integration; random variables; independence; convergence in probability, almost everywhere, and in the mean; conditional probability and expectation.
Au Qtr. 4 cl. Prereq: Math 653. Not open to students with credit for Math 722. Cross-listed in Mathematics.

723* Theory of Probability II G 4
Weak convergence; characteristic functions; central limit theorems; random walks; introduction to martingales.
Wi Qtr. 4 cl. Prereq: 720 or Math 722. Not open to students with credit for Math 723. Cross-listed in Mathematics.

725* Sequential Statistical Methods G 3
Two-stage designs; Wald's SPRT, its characteristics and generalizations; Cox's theorem; group-sequential designs; Bayes sequential decisions, sequential estimation, and fixed-width interval estimates; optimal stopping rules.
Au Qtr. 3 cl. Prereq: 622 or 623.

742 Analysis of Variance U G 3
Theory of the general linear model, least square estimates and properties, especially in non-full rank models; analysis of variance technique; factorial designs.
Au Qtr. 3 cl. Prereq: 521 or 623, and Math 471 or 601.

745* Multiple Comparisons Procedures G 3
Types and levels of multiple comparison inference, abuses, sample size computation, graphical representation.
Sp Qtr. 3 cl. Prereq: 742 or permission of instructor.

746 Design and Analysis of Experiments U G 3
A continuation of 742; various experimental designs; analysis of covariance, mixed and random models.
Wi Qtr. 2 cl. Prereq: 742.

755 Multivariate Analysis I G 3
Geometrical representations of data; random vectors, normal distribution for random vector and random data matrices, Wishart distribution, inferences based on normal theory.
Wi Qtr. 2 cl. Prereq: 521 or 623, and Math 471 or 601.

756 Multivariate Analysis II G 3
Multivariate regression analysis; principal component analysis; factor analysis; canonical correlation analysis; discriminant analysis—all from a theoretical point of view.
Sp Qtr. 2 cl. Prereq: 755.

761 Nonparametric Statistics I G 3
Order statistics, equal in distribution technique, counting and ranking methods, distribution-free statistics, Monte Carlo power simulation studies, asymptotic relative efficiency.
Au Qtr. 3 cl. Prereq: 622 or 623.

763 Nonparametric Statistics II G 3
Distribution-free confidence intervals, Hodges-Lehmann estimators, robust estimation, linear rank statistics; distribution-free tests: alternative methods for constructing distribution-free statistics.
Wi Qtr. 3 cl. Prereq: 761.

784* Order Statistics U G 4
Distribution theory in continuous and discrete cases, moments, order statistics in statistical inference, asymptotic theory.
Sp Qtr. 4 cl. Prereq: 622 or permission of instructor.

773 Statistical Computing G 3
Random number and variate generation, variance reduction, integral equations, resampling methods, maximization, E-M algorithm and other topics.
Au Qtr. 3 cl. Prereq: 622 and 630.

777* Optimizing Methods in Statistics U G 3
Survey of classical optimizing techniques with applications in statistics, mathematical programming and constrained estimation, variational methods and dynamic programming applied to statistical problems, miscellaneous applications.
Wi Qtr. 3 cl. Prereq: Permission of instructor.

H783 Honors Research U 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project, a minimum 3.50 pt-hr ratio in the field of distinction, standing, and cumulative pt-hr commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

801 Seminar on Research Topics in Statistics G 2
Lectures on current research by each graduate faculty member in statistics.
Au Qtr. 1 2-hr cl. Prereq: 2nd yr standing in stat/PhD program or permission of instructor. Repeatable to a maximum of 4 cr hrs. This course is graded S/U.

820 Statistical Inference I G 3
Statistical decision theory, foundations of statistics, Bayesian analysis, sequential analysis, sequential probability ratio test.
Au Qtr. 3 cl. Prereq: 622.
Statistics

821 Statistical Inference II  G 3
Sufficiency and invariance, unbiased and equivariant estimators, Neyman-Pearson, UMP, UMPU and invariance tests. Wi Qtr. 3 cl. Prereq: 722, or Math 722 and 820.

822 Statistical Inference III  G 3
Asymptotic theory for estimators and tests, resampling methods and other topics in modern inference. Sp Qtr. 3 cl. Prereq: 723 or Math 723, and 821.

825* Advanced Bayesian Analysis  G 3
Bayesian computation, nonparametric Bayesian methods, semiparametric Bayesian methods, robust Bayesian analysis, complex Bayesian models. Wi Qtr. 3 cl. Prereq: 821.

832 Applied Probability Models  G 3
Birth and death processes, Queuing Theory, Branching processes and other applied probability models. Wi Qtr. 3 cl. Prereq: Math 722.

834* Statistical Inference for Stochastic Models  G 3

847* Advanced Design of Experiments  G 3
Partially balanced designs, factorial experiments, confounding and fractional replications, response surface designs. Sp Qtr. Prereq: 746.

881* Advanced Topics in Mathematical Statistics I  G 3
Topics to be taken from the following: multivariate analysis, stochastic processes, analysis of variance, components of variance models, advanced test design. Au, Wi Qtr. 3 cl. Prereq: Grad standing in stat. Repeatable to a maximum of 9 cr hrs.

882 Advanced Topics in Mathematical Statistics II  G 3
Continuation of 881. Au, Wi, Sp Qtr. 3 cl. Prereq: Grad standing in stat. Repeatable to a maximum of 9 cr hrs.

886* Large Sample Theory  G 3
Mann-Wald theory of stochastic order relationships; asymptotic distribution of maximum likelihood estimates and likelihood ratio statistic; large deviation theory; asymptotic theory of well-known statistics. Sp Qtr. 3 cl. Prereq: 822.

893 Advanced Individual Studies  G 1-5
Individual conferences, assigned readings, and reports on investigations. Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

894 Advanced Group Studies  G 1-5
Designed to give groups of advanced students an opportunity to pursue special studies not otherwise offered. Su, Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs.

895 Statistics Seminar  G 1
Topics range over the current research interests of statisticians from around the world; some lectures are of an expository nature. Au, Wi, Sp Qtr. 1 cl. Prereq: Permission of dept. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

999 Research G Arr
Research for thesis or dissertation purposes only. Su, Au, Wi, Sp Qtr. This course is graded S/U.

Surgery

329 Meents Hall, 1654 Upham Drive, 203-8701

790 Research Studies in Surgery  P 6, 12, 18 G 3-5
1, 2, 3, or 4 months (prof cr). Su, Au, Wi, Sp Qtrs (grad cr). Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs for grad credit. This course is graded S/U.

790.08 Plastic Surgery
1, 2, 3, or 4 months; offered all months. Repeatable to a maximum of 24 cr hrs for professional credit.

791 Clinical Studies in Surgery
Prereq: Permission of instructor.

791.07 General Surgery P 12 or 24
Offered all months. Repeatable to a maximum of 24 cr hrs.

791.09 Thoracic Surgery P 6
1 month, offered all months.

999 Research in Surgery G Arr
Research for thesis purposes only. Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Surveying

470 Hitchcock Hall, 2070 Nell Avenue, 292-2005

203 Introduction to Surveying  U 3
Basic surveying concepts; surveying instrumentation; the art of field data acquisition; planning and execution of field surveys; applications to professional surveying practice, engineering, and other disciplines. Au Qtr. 2 cl, 1-3 hr lab. Prereq or concur: Math 151; or written permission of instructor.

301 Surveying Measurements and Computations  U 4
Surveying measurement theory; analysis of measurements; computation and adjustment on a plane, with PC applications. Wi Qtr. 3 cl, 1-3 hr lab. Prereq: 203; prereq or concur: Math 152 and En Graph 166.

403 History of Surveying and Mapping  U 3
History of Earth measurement and methods; historical connections with other sciences; history of land survey systems in the U.S.; milestones in technology; and associations. Au Qtr. 3 cl.

407 Construction Surveying  U 4
Route surveying and geometric design; topographic site surveys and mapping; civil engineering and construction surveys; earthwork computations; layout of industrial plants, buildings, cables, pipelines, and manufacturing machinery. Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 301 or Civil En 202 or 402.

450 Surveying Data Adjustment and Analysis  U 5
Review of statistical concepts; propagation of variances and covariances; least squares adjustment of problems in surveying; analyses of results from least squares adjustments; hypothesis testing. Sp Qtr. 4 cl, 1-3 hr lab. Prereq: Math 556.

506 Introduction to Photogrammetry  U 4 G 4
Basic concepts of photogrammetry: optical, photographical, mathematical, and geometric principles relevant to photogrammetry; data-acquisition systems; theory and procedures of stereoscopic mapping; and map compilation using analog stereo-plotters. Au Qtr. 3 cl, 1-3 hr lab. Prereq: 301 or Civil En 202 or 402; and prereq or concur: Math 153 or Physics 133 or permission of instructor.

507 Land Subdivision Analysis  U G 3
Process of subdividing and platting land; analysis of soils, topography, terrain, earthwork, geometry, and other variables for land subdivision, plat preparation; layout of development plans. Sp Qtr. 3 cl. Prereq: 407 and Civil En 510 or equiv.

509 Surveying Astronomy  U G 3
Celestial sphere and its coordinate system; sidereal, universal, and atomic time; time conversions; ephemerides; instrumentation for astronomical observations in surveying; determination of azimuth, latitude, and longitude. Sp Qtr. 2 cl, 1-3 hr lab. Prereq: 511.

510 Topics in Professional Practice  U G 2
Topics in applicational areas of surveying from the point of view of the practitioner and the consumer of land-related data. Sp Qtr. 1 2-hr cl. Prereq: 301.

511 Geodetic Control Surveying  U 5
Introduction to geodetic surveying and field astronomy, with emphasis on the various commonly-used coordinate and reference systems. Au Qtr. 4 cl, 1-3 hr lab. Prereq: 301 and 450. Not open to students with credit for 509. A revised course designed to provide a basic introduction to geodetic control surveying and topics in field astronomy, previously offered in 505, for surveying students.

515 Photogrammetric Mapping and Surveying  U G 4
Photogrammetric aerial triangulation; analytical point positioning applications to terrestrial photogrammetry and camera calibration; computer-controlled systems; data capture for digital elevation models; orthophotography; mapping with space systems; digital photogrammetry. Sp Qtr. 3 cl, 1-3 hr lab. Prereq: 450, 506, 511, or permission of instructor.
524 Boundary Location Principles U G 4
Land surveyor's role; analysis of evidence and procedures for boundary locations; retraction principles for sequence; simultaneous and public surveys; laws on surveying practices.
Wi Qtr. 3 cr, 1-3 hr lab. Prereq: 301 and 403.

608t Surveying Projects U G 5
Planning, execution, and analysis of surveying projects; integrating background in geodetic, engineering, photogrammetric, cartographic, and land surveying; oral, written, and graphical presentation of complete projects.
Su Qtr. 5 cr hist labs. Prereq: 407, 509, 515, and 524.

609 Surveying with Satellites U G 3
Surveying with Earth artificial satellites, global positioning system, relative positioning using interferometric technique, kinematic surveying.
Wi Qtr. 2 cr, 1-3 hr lab. Prereq: 450 and 511.

625 Cadastral Information Systems U G 4
Land tenure, evolution of the cadastral, and its relation to land rights; components of multipurpose cadastral, conceptual models, design, implementation problems, future outlooks, and land information systems.
Sp Qtr. 3 cr, 1-3 hr lab. Prereq: 524 or permission of instructor. Not open to students with credit for 525.

Swahili

486 University Hall, 230 North Oval Mall, 292-3700
101 Elementary Swahili I
Development of basic listening, speaking, and reading skills using a competency-based curriculum.
Su, Au, Wi, Sp Qtrs. Not open to students with credit for 101, or to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. GEC for lang courses. FL Admis Cond courses.
101.01 Classroom Track U 5
Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.
101.51 Individualized Track U 1-5
Prereq: Permission of instructor. Students register for and complete 1 to 5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

102 Elementary Swahili II
Continuation of 101; further work on basic listening, speaking, and reading skills using a competency-based curriculum.
Su, Au, Wi, Sp Qtrs. Not open to students with credit for 102, or to native speakers of this language through regular course enrollment or EM credit. GEC for lang courses. FL Admis cond courses.
102.01 Classroom Track U 5
Prereq: 101 or 101.01 or 5 cr hrs of 101.51. Students must register for and complete 5 cr hrs during the qtr. This course is available for EM credit.
102.51 Individualized Track U 1-5
Prereq: Grade of B+ or above in 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students may register for 101.51 and 102.51 concurrently with permission of instructor. Students register for and complete 1-5 cr hrs during the qtr. Progress is sequential from 1 cr hr to the next with proficiency at the level of 80% required for advancement.

103 Intermediate Swahili I U 5
Further development of listening, reading, speaking, and writing skills, readings based on Swahili culture and literature.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 102 or 102.01 or 102.51. Not open to students with credit for ATAM&AS 202, or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104 Intermediate Swahili II U 5
Balanced use of basic language skills; emphasis on speaking and aural comprehension; further exposure to Swahili cultures through reading of current newspapers, short stories, plays, and novels.
Su, Au, Wi, Sp Qtrs. 5 cr. Prereq: 102 or equiv. Not open to students with credit for ATAM&AS 204, or to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

401t Advanced Swahili Grammar U 5
Review of fundamental principles of grammar and syntax; exercises in Swahili.
Wi Qtr. 5 cr. Prereq: 104 or permission of instructor.

402t Advanced Swahili Grammar and Composition U 3
Introduction to advanced Swahili composition and grammar.
Sp Qtr. 3 cr. Prereq: 401 or permission of instructor.

Textiles and Clothing

231 Campbell Hall, 1737 Neil Avenue, 292-8363
270 Aesthetics of Appearance U 3
The perception and presentation of the self through appearances. Considerations include aesthetic norms, color psychology, body concerns, personality expression, and context.
Au, Wi Qtrs. 3 cr and arranged labs. This course is available for EM credit. VPA Admis Cond course.

275 The Business of Fashion: Apparel, Textiles, and Home Furnishings U 3
Survey of supply, manufacture, distribution, and auxiliary industries impacting production, distribution, and sale of textiles, apparel, and products for the home; fashion terminology, creators, careers.
Au, Sp Qtrs. 3 cr. Prereq: Open to students with credit for 570.

259 Introductory Field Experience U 3 or 5
Ten-week practical experience or equivalent in approved retail establishment, or other enterprise related to student's major interest.
Au, Wi, Sp Qtrs. Prereq: 2.00 CPHR, 270, 275 and 575 or CER PSS M 351 and written permission of instructor. Open to textile & apparel majors only. This course is graded S/U.
294 Group Studies U 2, 3, or 5
Selected topics in textiles and clothing. Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 cr hrs.

379 Fashion Design and Illustration U 3
Creative approach to the study of clothing through fashion illustration and costume design; student will be prepared to communicate fashion information in various ways. Wi, Sp Qtr. 3 2-hr hrs lab. Prereq: 270 or equiv with written permission of instructor; 3rd yr standing.

371 Textiles I U 5
Fiber properties, yarn and fabric construction, color, and finishes as they relate to performance, care, and consumer satisfaction. Au, Wi Qtr. 2 2-hr cl, 1 2-hr lab. Prereq: 2nd yr standing.

372 Appearance, Dress, and Cultural Diversity U 5
A cross cultural study of the diversity and meaning of appearance and dress as manifestations of individual and group behavior, social organization, and cultural norms. Au, Sp Qtrs. 4 cl. Prereq: Soc 101 or Rur Soc 105. Not open to students with credit for 272. GEC social science course. SS Admis Cond core.

375 Ready-to-Wear Analysis U 3

485 Merchandise Buying U 3
Buyer's role in merchandise management and decision-making, planning, and control processes; merchandise resources and evaluating; and pricing and preparing merchandise for sale. Wt Qtr. 2 1 1/2-hr cl; Prereq: 275, 372, 375, or FM Res M 330, 351 and Acct&MIS 201 or 211 or permission of instructor. Not open to students with credit for 570.

571 Textile Analysis and Evaluation U 5
Standards and specifications, planning and conducting textile tests, analysis and interpretation of test data, quality assurance in textiles, apparel, and home furnishings industries. Au, Sp Qtrs. 2 2-hr cl, 1 2-hr lab. Prereq: 371, Chem 102, Stat 133, or 135, or 145.

571.01 Apparel Textiles
Application of textile testing and analysis to apparel textiles. Not open to students with credit for 571.

571.02 Interior Textiles
Application of textile testing and analysis to interior textiles. Not open to students with credit for 571.

576 Global Patterns and Issues in Textiles and Apparel Trade U 3
International factors affecting the textiles and apparel industries and their impact on the economy and consumers. Wi Qtr. 2 1 1/2-hr cl; Prereq: 275, 371 and Econ 400 or 201, or permission of instructor.

589 Internship U 15
One quarter supervised experience at a department approved intern site related to the student's selected option. Investigation and analysis of assigned problems. Su, Au Qtr. Prereq: 2.5 cum pt-hr ratio, 4th yr standing, 596, 16 hrs in major, 7 hrs in supporting area (as per program sheet), Fashion & Interior Merchandising or Product Development Option only. Open to txt&clo majors only. No other courses may be taken nor any other jobs held for the duration of the internship. Au Qtr interns must work through Dec 24. Autumn Retail Merchandising intern grades will be deferred to Wi Qtr. This course is graded S/N.

590 Practicum in Textiles and Clothing Research U 1-5
Provides students with the opportunity to work individually with a faculty member on a research project. Au, Wi, Sp Qtrs. Arr. Prereq: 4 cr or standing and permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

593 Individual Studies U 1-5
Problems in various phases of textiles and clothing related to individual's program. Su, Au, Wi, Sp Qtrs. Regular conferences. H593 (honors) may be available to students enrolled in college honors program or eligible for enrollment. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

595 Professional Development U 2
The professional: career opportunities and goals, position securement, professional organizations, and continued personal development. Wi, Sp Qtrs. 2 cl. Prereq: 270, 275, or 3rd yr standing, 2nd level writing course. Recommended: 595 not to be taken more than 3 qtrs prior to 599.

672 History of Costume and Textiles U 5
A chronological study of costume and textiles from ancient civilization to modern times, with consideration of cultural forces that affected the development. Au, Wi Qtr. 2 2-hr cl. Prereq: 371 and 3rd yr standing.

675 Fashion Analysis U 3
An examination of fashion theories and the evolution of fashion in the 20th century applied to the merchandising of fashion. Wi Qtr. 3 cl. Prereq: 275 or 570, and 672.

678 Preservation and Restoration of Historic Textiles and Apparel U 3
Study of techniques and procedures to preserve and restore textiles and apparel of historic value. Su Qtr. 1 2-hr cl, 2 2-hr labs and arr hrs. Prereq: 10 cr hrs in 600 level and above textiles and clothing courses or equiv.

685 Strategic Merchandising Management U 3
Analysis and synthesis of merchandising practices and problems through the use of computer simulations and case studies. Wi, Sp Qtrs. 2 1 1/2-hr cl. Prereq: 485, Bus-Mktg 755, and Stat 135 or 145.

690 Workshop U G 1-4
Intensive study of a topic of common concern to the participants for 1 to 3 weeks. May be an off-campus or an on-campus full-time group meeting. Prereq: Written permission of instructor. Repeatable to a maximum of 12 cr hrs. Travel and subsistence costs for off-campus workshops will be borne by the student. These courses are graded S/U.

690.01 Textiles
690.02 Clothing
690.03 Merchandising

694 Group Studies U G 1-5
Selected topics in textiles and clothing. Prereq: Open to students who meet department's stated prereq. Repeatable to a maximum of 10 cr hrs.

697 Study at a Foreign Institution U G 1-5
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

698 Study Tour U G 1-5
Specific content, location, quarter(s) of offering, and prerequisites vary; contact department office for details. Prereq: Permission of instructor. Repeatable for different titled study tours only.

698.01 Domestic
698.02 Foreign
698.03 New York U 2

715 Textile Fiber Chemistry U G 3
Study of physical and chemical properties of polymers, polymerization processes, and the physical and chemical properties of textile fibers. Wi Qtr. 2 1 1/2-hr cl. Prereq: 571, or permission of instructor.

752 Textile Fiber Physics U G 3
Study of the physical properties of fibrous polymers, the morphological arrangement of these polymers, the relationship between microstructure and fiber properties. Wi Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 371, 571, Chem 102, or equiv. Either 751 or 752 is required in the Master's program.

772 Costume and Culture U G 3
National and regional dress in relation to culture, available resources, and technology. Sp Qtr. 2 1 1/2-hr cl. Prereq: 10 hrs at the 600 level and above, or written permission of instructor.
Research in Textiles, Apparel, and Merchandising [UG 3]
1 3-hr cl. Not open to students with credit for 877.

777.01 Literature Review
An introduction to the literature in textiles, apparel, and merchandising with emphasis on the substantive content and scope of the research.
Au Qtr. Prereq: Grad standing or permission of instructor.

777.02 Methods
Introduction to methods currently in use in textiles, apparel, and merchandising research, with emphasis on the research process and proposal writing.
Wi Qtr. Prereq: 777.01, or equiv with written permission of instructor.

793 Individual Studies [UG 1-5]
Problems in various phases of textiles and clothing related to individual's program.
Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

851 Textile Fiber Microscopy [G 3]
Study of the principles and techniques of microscopy with particular attention given to the methods used in the examination of textile fibers.
Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 751 or 752, Chem 102 or permission of instructor.

852 Textile Dyeing [G 3]
Study of the chemistry of dyes, the theory of dyeing and the dyeing process, the application of dyes, and the evaluation of dyed textiles.
Au Qtr. 1 2-hr cl, 1 2-hr lab. Prereq: 751, or permission of instructor.

870 Theories of Fashion [G 3]
Theories underlying fashion change, and an analysis of fashion as a social and economic force.
Su Qtr. 2 1½-hr cl or 1 2½-hr cl. Prereq: Research methods or written permission of instructor; 12 cr hrs at the 600 level and above.

874 Aesthetics: Appearance Management and Self-Presentation [G 3]
The aesthetics of dress as a medium of visual communication with analysis of appearance management strategies employed in the social presentation of self.
Sp Qtr. 2 1½-hr cl. Prereq: 1 course in social psychology and 1 course in art; 777.01 and 777.02.

875 Social Psychological Aspects of Clothing [G 3]
A study of dress and adornment as they relate to human behavior.
Au Qtr. 2 1½-hr cl or 1 2½-hr cl. Prereq: Research methods, 12 cr hrs at the 600 level and above, or written permission of instructor.

876 Textiles and Clothing Industries: Economic Appraisal [G 3]
Impact of the textiles and clothing industries on the consumer and the economy.
Wi Qtr. 1 2½-hr cl. Prereq: 571 or 670, Econ 400 or equiv; or written permission of instructor.

877 Advanced Research Methods in Textiles and Clothing [G 3]
Research strategies and methodologies, with focus on paradigms and procedures and the assumptions underlying them, data analysis, and interpretation.
Su Qtr. and 877.02 will be offered in alternate years.

877.01 Quantitative Research Methods in Textiles and Clothing
Study of research in textiles and clothing, focusing on experimental design, model building, and data analysis and interpretation, including regression, correlation, and analysis of variance.
Au Qtr. 2 1½-hr cl. Prereq: 777.02, Stat 520, or permission of instructor.

877.02 Qualitative Research Methods in Textiles and Clothing
Exploration of qualitative research methodologies, with emphasis on epistemological assumptions and interpretation.
Su Qtr. 1 2½-hr cl. Prereq: 777.02 or equiv.

878 History of Textiles [G 3]
The development of textiles in prehistoric, ancient, medieval, and modern history, with special emphasis on Western European textiles.
Sp Qtr. 1 2-hr cl, hrs arr. Prereq: 672 or written permission of instructor.

879 Current Topics in Textiles and Clothing [G 1-3]
Analysis of current developments, issues, and trends in textiles, clothing, and merchandising; topics to be announced.
Su, Au, Wi, Sp Qtrs. 1-3 cl. Prereq: 12 cr hrs at the 600 level and above, including research methods; or written permission of instructor. Repeatable to a maximum of 9 cr hrs.

880 Semiotics of Apparel and Related Consumer Products [G 3]
Study of sign systems and the production of meaning applied to apparel, appearance, and related products.
Wi Qtr. 2 1½-hr cl. Prereq: Grad standing.

889 Practicum in Research in Textiles and Clothing [G 1-5]
Participation in the research process under the supervision of a faculty member.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Grad standing, a research methods course, e.g., 772.02 or equiv, and permission of instructor. Repeatable to a maximum of 15 cr hrs. A maximum of 5 cr hrs may be included in student's Program of Study. Graded S/U.

894 Group Studies [G 2, 3, or 5]
Selected topics in textiles and clothing.
Prereq: Open to students who meet dept's stated prereq. Repeatable to a maximum of 10 cr hrs.

899 Individual Studies [G 1-5]
Problems in various phases of textiles and clothing related to individual's program.
Su, Au, Wi, Sp Qtrs. 1 or more conf. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

998 Research: Thesis [G Arr]
Research for master's thesis.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

999 Research: Dissertation [G Arr]
Research for dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Theatre
1089 Drake Union, 1849 Cannon Drive, 252-5821
100 Introduction to Theatre [U 5]
A study of the theatre with emphasis upon its cultural and social influences in our society.
Su, Au, Wi, Sp Qtrs. H100 (honors) may be available to students enrolled in an honors program or by permission of dept. GEC arts and hums VPA course. VPA Admis Cond course.

161 Dance and Theatre, 1945 to the Present [U 5]
Survey of contemporary practices in western dance and theatre from 1945 to the present, with emphasis on major stylistic trends, multicultural influences, and principal artists and their works.
Su, Au, Wi, Sp Qtrs. 2 ½-hr cl, 1 ¼-hr rec. Not open to students with credit for Arts Col 161 or Dance 161. GEC arts and hums VPA course. VPA Admis Cond course. Cross-listed in Dance.

205 Technical Production Practicum [U 1]
Provides experience in technical production activities.
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 6 cr hrs. VPA Admis Cond course.

210 Fundamentals of Script Analysis [U 3]
Fundamental principles for intensive study of the play script as the basis of production.
Wi, Sp Qtrs. Prereq: 100. VPA Admis Cond course.

220 Technical Production Fundamentals I [U 3]
Basic aspects of scenery design construction, theory, process, equipment, materials, and skills.
Su, Au, Wi Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

221 Technical Production Fundamentals II [U 3]
Basic aspects of lighting design and technology, theory, process, equipment, materials, and skills.
Wi, Sp Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

222 Technical Production Fundamentals III [U 3]
Basic aspects of costume design and construction; equipment, theory, process, equipment, materials, and skills.
Au, Sp Qtrs. 2 cl, 2 lab hrs. VPA Admis Cond course.

H230 Moving Image Art [U 5]
Exploration of creative moving image art through the use of video and with participation in Wexner Center video program.
Wi Qtr. 1 2-hr cl, 1 3-hr cl. Prereq: Enrollment in an honors program or permission of instructor, and soph standing. GEC arts and hums VPA course.
271 Great Ages of the Theatre U 5
Concepts and characteristics of the great periods of the theatre of the western world.
Au, Wi, Sp Qtrs. (Offered only on regional campuses). H271 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: English 110 or 111 or equiv. GEC arts and hums VPA course. VPA Admis Cond course.

280 Acting Fundamentals I U 3
Basic acting techniques; imagination, concentration, human psychology as applied to creation of character and development of stage presence. Au, Wi, Sp Qtrs. 4 lab hrs. VPA Admis Cond course. GEC arts and hums VPA course.

305 Production Run Crew Practicum U 2
Hands-on involvement in the production of live theatre; participation leading to a more thorough understanding of theatre and in particular theatre design and technology.
Au, Wi, Sp Qtrs. Arr. Repeatable to a maximum of 8 cr hrs.

310 Stage Directing U 3
Techniques of play analysis, interpretation, composition, movement, rhythm and tempo; their integration in stage direction.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 210, 280, and jr standing.

341* Introduction to Stage Design U 3
Introduction to basic design elements of stage design including research, sketching, color theory, and model building.
Wi Qtr. 2 1 1/2-hr cl. Prereq: 220.

353 Stage Makeup U 3
Practical application of the theories and techniques of theatrical makeup and presentational theatre styles. 2 3-hr labs. Not open to students with credit for 250 or 251.

387 Theatre Writing Courses U 5
Study of theatre history at an intermediate level with emphasis on writing skills. 5 cl or 2 3 1/2-hr cl. Prereq: English 110 or 111 or equiv. and soph standing. GEC second writing and social diversity courses.

367.01 Self Images: America on Stage, 1830 to the Present
Exploration of the images of Americans presented on popular stages through written analysis of theatrical and critical texts.
Au, Wi, Sp Qtrs. Not open to students with credit for 367.

367.02 African American Theatre History
Examination of the aesthetic and sociological evolution in America of African American theatre and its literature.

380 Acting Studio IA U 3
Studio in acting focusing on the principles of Stanislavsky in rehearsed scenes.
Au Qtr. 3 2-hr cl. Prereq: 280, 383, and 386; or permission of instructor.

381 Acting Studio IB U 3
Studio in acting focusing on the special challenges of acting in Shakespeare's plays.
Wi Qtr. 3 2-hr cl. Prereq: 280, 383, and 386; or permission of instructor.

382 Acting Studio IC U 3
Studio in acting focusing on the use of improvisation as a technique for exploring rehearsed scenes.
Sp Qtr. 3 2-hr cl. Prereq: 280, 383, and 386; or permission of instructor.

390 Speech and Voice Studio I U 3
Basic study and training in voice production, phonetic transcription, and vocal expressiveness.
Au, Wi, Sp Qtrs. Prereq: 280.

384 Speech and Voice Studio II U 3
Continuation of 390: developing vocal range and resonance, breath control, articulation and expanded dialect choices through work on a variety of performed texts.
Wi Qtr. 4 cl. Prereq: 383.

385 Speech and Voice Studio III U 2
Individual voice problems: phonetic transcription and sound appreciation.
Sp Qtr. 4 cl. Prereq: 384.

386 Stage Movement Studio I U 3
Fundamentals of movement training; particular attention on physical awareness, body alignment, and physical principles of acting.
Au, Wi, Sp Qtrs. 4 cl. Prereq: 280.

387 Stage Movement Studio II U 2
Introduction to mask work: continuation of 386.
Wi Qtr. 4 cl. Prereq: 386.

388 Stage Movement Studio III U 2
Introduction to stage combat: continuation of 387.
Sp Qtr. 4 cl. Prereq: 387.

405 Theatre Practicum II U 1-3
Provides experience in theatrical performance and production activities at an intermediate level.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 18 cr hrs in any combination of decimal subdivisions.

405.01 Stage Direction/Management
405.02 Technical Production
405.04 Stage Design
405.05 Costuming/Makeup
405.08 Acting
405.09 Theatre Management
405.10 General
405.12 Lighting

494 Group Studies U 1-3
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 9 cr hrs.

531 Theatre Repertory I U 3
Survey of representative world drama and theatre from classical Greece to the 17th century.
Au Qtr. 2 1 1/2-hr cl.

532 Theatre Repertory II U 3
Survey of representative western drama and theatre from the 17th century through the rise of realism.
Wi Qtr. 2 1 1/2-hr cl.

533 Theatre Repertory III U 3
Survey of representative drama and theatre since the rise of realism.
Sp Qtr. 2 1 1/2-hr cl.

600 Professional Aspects of Theatre U G 3
Study of the professional theatre as a business; contracts, unions, the theatre marketplace; preparation of resumes, portfolios, audition pieces, interview.
Au Qtr. 3 cl. Prereq: 4th yr standing in theatre or final yr of grad study.

601 Theatre Management U G 3
Principles, practices, and techniques of theatre management and a survey of modern management techniques. Prereq: 220 and 221; or permission of instructor.

602 Stage Management U G 3
Principles, practices, and techniques of stage management, and a survey of modern management techniques. Au Qtr. 2 2-hr cl. Prereq: 220 and 221, or permission of instructor. Not open to students with credit for 601 prior to Au Qtr 1994.

610 Advanced Stage Directing U G 3
Principles, techniques, and practice of advanced direction and integration of technical elements in theatrical production.
Sp Qtr. 2 2-hr cl. Prereq: 310 or permission of instructor.

621 Theatre Graphics U G 3
Technical and design graphics, and drafting procedures for production of scenery and lighting designs.
Sp Qtr. 1 2-hr cl. Prereq: 220 or permission of instructor.

622* Metals as a Scenic Element U G 3
Introduction to metal products and fabrication techniques for scenery and properties.
Wi Qtr. 3 cl. Prereq: 220 or permission of instructor.

623* Advanced Technical Production U G 3
Consideration of methods and materials for stage rigging, mechanics, and non-traditional scenic materials.
Sp Qtr. Prereq: 220 or permission of instructor.

624* Technical Direction U G 3
Study of technical direction and production management; budget, personnel, schedule, other logistic problems in technical production.
Sp Qtr. 3 cl. Prereq: 220 and 221; or permission of instructor.
625 Lighting Design I U G 3
A study of light as a design element for theatrical performance; analysis and preparation of designs for theatre applications.
Au Qtr. Prereq: 220 and 221, or permission of instructor.

626* Theatre Sound Techniques U G 3
A survey of equipment and operational techniques used to provide sound support for theatrical productions.
Wi Qtr. 2 2-hr cl, 20 lab hrs arr. Prereq: 221 or permission of instructor.

631 Cinema Production I U G 5
Principles and procedures in 16 mm camera production, including camera, scripting, lighting, editing, and sound; emphasis on film as a form of visual expression.
1 2-hr cl, 2 2-hr labs. Not open to students with credit for Photog 551. Students must have own exposure meter.

632 Cinema Production II U G 5
Intermediate 16 mm film production; introduces lip-sync sound recording, advanced cinematography and post-production procedures, including the mix and release printing to film or video.
2 2-hr cl. Prereq: 631. Not open to students with credit for Photog 553.

633 Editorial Process U G 5
Introduces theoretical and procedural basis for montage, controlling cinematic time, and understanding relationship of sound to image, including digital audio post-production.
2 2-hr cl. Prereq: 631. Not open to students with credit for Photog 555.

634 Video Production I U G 5
An introduction to creative single camera video production—emphasis on performance, staging, and editing short video productions.
Au, Wi Qtrns. 2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Photog 661.

635 Video Production II U G 5
Continued exploration of creative single camera video production; topics may include documentary, drama, and experimental.
Sp Qtrns. 2 2-hr cl. Prereq: 634 or permission of instructor. Not open to students with credit for Photog 652.01, 652.02, and 652.03. Repeatable to a maximum of 10 cr hrs.

636 Screenwriting U G 5
Exploration of creative scriptwriting for video/cinema; development of short or feature length scripts.
2 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for Photog 560.

640 Decorative Arts for Theatre U G 3
Survey of ancient to modern decorative arts and their adaptation to stage use, with emphasis on interiors, furniture, textiles, and colors.
Wi Qtr.

641 Stage Design Medis U G 3
Techniques of rendering for stage design in various media.
Au Qtr. Prereq: Permission of instructor.

642 Scene Painting and Watercolor U G 3
Techniques used in scene painting and watercolor; mixing and matching colors, rendering texture and form, enlarging painter's elevations, types of paints used in scene painting.
Sp Qtrns. Prereq: 641 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

643 Stage Design I U G 3
Investigation of 20th-century design and rendering techniques and their application to the stage; experience in researching and designing projects.
Au Qtr. 2 2-hr cl, 3 lab hrs, and indiv conferences. Prereq: 341 or permission of instructor.

644 Intermediate Stage Design II U G 3
Presentation of the design concept in three-dimensional media; emphasis on designing for nonproscenium production.
Wi Qtr. 1 2-hr cl, 3 lab hrs. Prereq: 643 or permission of instructor.

645 Modern Stage Design Styles U G 3
Study of the application of major stylistic trends in scenic design to modern theatrical productions through lecture-discussion and specific design projects.
Sp Qtrns. Arr. Prereq: 644 or permission of instructor.

646 Stage Properties U G 3
Techniques in construction and design of stage properties, including production operation.
Au Qtr. 2 2-hr cl. Prereq: 220 or permission of Instructor.

651 Intermediate Stage Costume Construction U G 3
Methods of pattern development and construction techniques for creating historical stage costumes.
Sp Qtr. 2 cl hrs, 2 lab hrs. Prereq: 222 or permission of instructor.

652 Advanced Costume Construction for the Theatre U G 3
The study of the materials, techniques, and procedures used in the design and construction of period stage costumes, properties, and accessories.
Sp Qtr. 2 cl, 2 hrs lab. Prereq: 651 or permission of instructor.

656 Costume Design for the Stage U G 3
The study of the theories, principles, and process by which costumes are designed for a theatrical production.
Au Qtr. 2 cl, 5 lab hrs. Prereq: 100 and 222 or permission of instructor.

657 History of Costuming for the Stage U G 3
Study of historical periods of clothing most often used in play production with emphasis on the relationship of period clothing to social deportment and movement.
Wi Qtr. 2 cl hrs, 2 lab hrs.

658 Intermediate Costume Design U G 3
Methods of stylization of costume design for drama, ballet, opera, musical comedy, and children's theatre.
Sp Qtr. 2 cl, 5 lab hrs. Prereq: 656 and 657, or permission of instructor.

660 Playwriting U G 5
Laboratory course in playwriting; student plays developed from original idea through scenario into final production script with limited production of selected works.
Prereq: Basic knowledge of dramatic literature and permission of instructor. Repeatable to a maximum of 10 cr hrs.

671 Theatre Topics I U G 5
Topical studies in theatre and drama from classical Greece to the 17th century.
Au Qtr. 2 2-hr cl. Prereq: 531, 532, and 533; or grad standing. GEC third writing course.

672 Theatre Topics II U G 5
Topical studies in theatre and drama from the 17th century through the rise of realism.
Wi Qtr. 2 2-hr cl. Prereq: 531, 532, and 533; or grad standing. GEC third writing course.

673 Theatre Topics III U G 5
Topical studies in theatre and drama since the rise of realism.
Sp Qtr. 2 2-hr cl. Prereq: 531, 532 and 533; or grad standing. GEC third writing course.

674 Contemporary Theatre History U G 5
Contemporary continental, English, and American theatre, post World War II to the present.
2 2-hr cl. Prereq: 531, 532, and 533; or grad standing. GEC third writing course.

680 Cinema/Video Scene Workshop I U G 3
Exploitation of directing talent and acting for single-camera style video/film production.
3 2-hr cl. Prereq: Permission of instructor. Open only to MFA acting and cinema majors. Not open to students with credit for 986.

681 Cinema/Video Scene Workshop II U G 3
Addressing problems of directing talent and acting for single-camera style video/film production.
3 2-hr cl. Prereq: 680 or permission of instructor. Open only to MFA acting and cinema/video majors. Not open to students with credit for 987.

685 Mime U G 2
Study of techniques, styles, and presentation of the art of mime.
2 2-hr cl. Repeatable to a maximum of 4 cr hrs.

689 Field Work in Theatre, Cinema, or Video U G 3-15
Planned production or management experience in an off-campus professional, educational, community theatre, film or video facility, or other agency under supervision.
Su, Au, Wi, Sp Qtrns. Prereq: Advanced undergrad or grad standing or permission of adviser. Repeatable to a maximum of 15 cr hrs.

692 Workshops U G 1-15
Intensive study of a problem common to the participants for the purpose of developing sound principles and practices relating to it.
Prereq: Upper-division or grad standing and pr or study and training in the theatre arts or written permission of workshop director. Repeatable to a maximum of 18 cr hrs.
693 Individual Studies U G 1-5
Conference, library, and laboratory work.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 or 4 hrs. This course is graded S/U.

694 Group Studies U G 1-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 or 4 hrs.

698 Study Tour U G 1-15
Specific content, location(s) of offering, and prerequisites vary; contact department office for details.
Prereq: Permission of instructor. Repeatable for different titled study tours only.
698.01 Domestic
698.02 Foreign

725 Advanced Stage Lighting Design U G 3
Study and analysis of lighting design styles in relation to different forms of theatre arts; emphasis on practical problems.
Wi Qtr. 2 2-hr cl, 3 lab hrs. Prereq: 625 or permission of instructor.

727 Advanced Lighting Technology U G 3
Study of current and future lighting technology in the area of control systems and stage lighting equipment as it applies to advanced lighting design.
Sp Qtr. 2 2-hr cl. Prereq: 625 or permission of instructor.

762 Theatre/Cinema Styles U G 5
Study and analysis of significant styles of production in the live theatre, cinema, and video.
Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor required of undergraduates.

771 Advanced Stage Movement Studio I U G 2
Fundamentals of movement; introduction to principles of movement for the actor.
Au Qtr. 4 cl. Prereq: Permission of instructor.

772 Advanced Stage Movement Studio II U G 2
Special problems in movement for the actor; beginning study of stylized techniques.
Wi Qtr. 4 cl. Prereq: Permission of instructor.

773 Advanced Stage Movement Studio III U G 2
Special problems in movement for the actor; intermediate study of stylized techniques.
Sp Qtr. 4 cl. Prereq: Permission of instructor.

774 Cinematic Representation G 3
Exploration of issues of representation and meaning of cinematic expression.
2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

775 Concepts and History of the Repertory/Ensemble G 3
Theory and practice of the repertory/ensemble model in the theatre, cinema, and video of the twentieth century.
2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

776 Issues in Contemporary Cinema/Video Production U G 3
Historical examinations of experimental and innovative cinema/video works with participation in Wexner Center film/video program.
2 2-hr cl. Prereq: Permission of instructor.

777 Studies in the Documentary U G 3
Conceptual, aesthetic, critical, social, ethical, practical issues in the practice of documentary and docudrama production of cinema and video works.
2 2-hr cl, 1 lab. Prereq: Permission of instructor.

778 A History of the Moving Image U G 3
Overview of creative and technological developments of the kinetic image from the magic lantern to television; historical relationships of stage and screen.
2 2-hr cl. Prereq: Grad standing in theatre or permission of instructor.

779 World Film Cultures U G 3
Survey of world film cultures with focus on a specific national and regional cinema.
2 2-hr cl. Prereq: 778 or permission of instructor. Repeatable to a maximum of 9 or 4 hrs.

780 Advanced Acting Studio I U G 2
Introduction to acting techniques, focusing on believability, impulse, and partnering.
Au Qtr. 3 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 790.

781 Advanced Acting Studio II U G 3
Development of techniques for acting in realistic plays.
Wi Qtr. 3 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 791.

782 Advanced Acting Studio III U G 3
Development of expanded techniques for acting in stylized plays.
Sp Qtr. 3 2-hr cl. Prereq: Permission of instructor. Not open to students with credit for 792.

H783 Honors Research U 3-5
An individual program of study, with conferences, reports, and honors thesis.
Su, Au, Wi, Sp Qtrs. Prereq: 4th yr standing; a grade of A in at least half of the theatre courses taken and an average of B in the remainder; permission of instructor under whose supervision the work is to be completed and the Arts and Sciences Honors Committee or the Arts Honors Committee whichever is relevant to the student’s program. Failure to receive a mark of S in this course is a disqualification for special honors. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

786 Advanced Speech and Voice Studio I U G 2
Vocal technique for the actor focusing on breathing techniques.
Au Qtr. 4 cl. Prereq: Permission of instructor.

787 Advanced Speech and Voice Studio II U G 2
Vocal technique for the actor focusing on aspects of vocal production.
Wi Qtr. 4 cl. Prereq: Permission of instructor.

788 Advanced Speech and Voice Studio III U G 2
Vocal technique for the actor focusing on articulation of speech.
Sp Qtr. 4 cl. Prereq: Permission of instructor.

800 Advanced Studies in Theatre G 3 or 5
Su, Au, Wi, Sp Qtrs. Repeatable to a maximum of 40 or 25 cr hrs in any combination of decimal subdivisions.
800.01 Stage Direction/Management
800.08 Acting
800.09 Theatre Management

801 Research Methods G 5
Introduction to graduate study: methods and tools of research in all areas of theatre and cinema/video.
Au Qtr. 2 2-hr cl. Prereq: Grad standing or permission of instructor.

802 Seminars in Theatre G 2-5
Su, Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 40 or 25 cr hrs in any combination of decimal subdivisions.
802.03 Dramatic Literature
802.08 Acting

805 Graduate Theatre Practicum G 1-5
Individual theatrical performance and production activities at an advanced level under faculty supervision.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 40 or 25 cr hrs in any combination of decimal subdivisions.
805.01 Stage Direction/Management
805.02 Technical Production
805.03 Dramaturgy
805.04 Stage Design
805.05 Costuming/Makeup
805.08 Acting
805.12 Lighting

810 Directing Period Drama G 2
Advanced problems in directing, utilizing scenes from period plays.
Prereq: 610, 671, 672, 673, and 762; or permission of instructor.

812 Directing Workshop G 1
Advanced processes in directing with an emphasis on the presentation of actual scenes/one-acts.
1 2-hr cl. Prereq: 610 or permission of instructor. Repeatable to a maximum of 8 cr hrs.

813 Cinema/Video Sketchbook I G 3
Exploration of sketchbook approach to research and development of creative cinema/video projects.
2 2-hr cl. Prereq: Permission of instructor.

814 Cinema/Video Sketchbook II G 3
Continued examination of creative approach to cinema/video idea development with introduction of actors to the process.
2 2-hr cl. Prereq: 813 or permission of instructor.
815 Cinema/Video Sketchbook III  G 3
Application of creative methods used in sketchbook sequence to self-directed research and development of short sketchbook projects.
2 2-hr cr. Prereq: 814 or permission of instructor.

816 Cinema/Video Mise en Scene I  G 3
Directed research and practice in issues of mise en scene for creative cinema/video production.
2 2-hr cr. Prereq: Permission of instructor. Open only to MFA theatre, cinema/video students.

817 Cinema/Video Mise en Scene II  G 3
Exploration of devices of mise en scene to facilitate collaboration and repertory methods of cinema/video production.
2 2-hr cr. Prereq: 816. Open only to MFA theatre, cinema/video students.

820 Pre-Production I: Thesis Idea  G 3
Cinema/video thesis concept development for narrative/non-narrative and documentary production.
2 2-hr cr. Prereq: 816.

821 Pre-Production II: Scenario Development  G 3
Examination of concepts in screenplay development.
2 3-hr cr. Prereq: 820.

822 Pre-Production III: Advanced Screenwriting  G 3
Alternative solutions to thesis script development.
2 2-hr cr. Prereq: 821 or permission of instructor.

823 Montage I: Editing Concepts and Practice  G 3
Project-oriented course in the conceptual foundations of the art of cinematic and video editing.
2 2-hr cr. Prereq: 817 or permission of instructor.

824 Montage II: Sound Concepts and the Image  G 3
Examination of innovative concepts and practice in sound/image design.
2 2-hr cr. Prereq: 823 or permission of instructor.

825 Advanced Stage Lighting Design II  G 3
Advanced study of lighting design and its creative application to modern theatre practice.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 725 or permission of instructor.

826 Montage III: Editorial Styles in Cinema/Video  G 3
Project-oriented course in editing styles and editor/director relationships.
2 2-hr cr. Prereq: 824 or permission of instructor.

833 Modern Drama  G 5
Studies in drama from the late 19th century to the present.
Wi Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor.

834 Contemporary Drama  G 5
Consideration of the most significant dramatic works since 1975.
Wi Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor.

845 Advanced Scene Design  G 3
Study of historic and modern scene design and application to modern theatrical stage practices; experience in executing creative and interpretive project designs.
Su, Au, Wi, Sp Qtrs. Prereq: 645 or permission of instructor. Repeatable to a maximum of 9 cr hrs.

855 Advanced Stage Costume Design  G 3
Theory, methods, and materials of costume design with emphasis on design problems for the stage.
Su, Au, Wi, Sp Qtrs. Prereq: 658 or written permission of instructor. Repeatable to a maximum of 9 cr hrs.

864 Theatre Criticism I  G 5
Critical theory of the theatre: classical to neoclassical.
Au Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor. Not open to students with credit for 865.

865 Theatre Criticism II  G 5
Critical theory of the theatre: 17th, 18th, and 19th centuries.
Wi Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor. Not open to students with credit for 861.

866 Theatre Criticism III  G 5
Sp Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor. Not open to students with credit for 863.

871 Greek, Roman, and Medieval Theatre  G 5
Advanced study and directed research in Greek, Roman, and Medieval theatre and drama.
Au Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor. Not open to students with credit for 870.

872 European Renaissance Theatre and Baroque Theatre  G 5
Advanced study and directed research in European Renaissance theatre and Baroque theatre and drama.
Wi Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor.

873 18th- and 19th-Century Theatre  G 5
Advanced study and directed research in European and American theatre and drama through the beginning of the twentieth century.
Sp Qtr. 2 2-hr cr. Prereq: Grad standing or permission of instructor.

879 Introduction to the Principles and Process of Acting  G 3
Major theories of acting and methods of actor training in the 20th century for the non-acting major.
2 2-hr cr. Prereq: Grad standing in theatre.

880 Advanced Acting Studio IV  G 3
Laboratory in visual and verbal effects.
Au Qtr. 3 2-hr cr. Prereq: Permission of instructor.

881 Advanced Acting Studio V  G 3
Laboratory in rehearsal methods.
Wi Qtr. 3 2-hr cr. Prereq: Permission of instructor.

882 Advanced Acting Studio VI  G 3
Selected styles: exploration of acting techniques and conventions of comedy, tragedy, farce, melodrama, and tragicomedy.
Sp Qtr. 3 2-hr cr. Prereq: 881 or permission of instructor.

883 Advanced Speech and Voice Studio I  G 2
Vocal technique for the actor focusing on Standard Stage Speech.
Au Qtr. 4 cr. Prereq: Permission of instructor.

884 Advanced Speech and Voice Studio II  G 2
Vocal technique for the actor focusing on work with texts.
Wi Qtr. 4 cr. Prereq: Permission of instructor.

885 Advanced Speech and Voice Studio III  G 2
Vocal techniques for Restoration and Greek drama: development of the techniques for vocal performance of characters from the plays of the Restoration and Classical Greek periods.
Sp Qtr. 4 cr. Prereq: 884 or permission of instructor.

886 Advanced Stage Movement Studio IV  G 2
Special problems in movement for the actor; advanced study of stylized techniques.
Au Qtr. 4 cr. Prereq: Permission of instructor.

887 Advanced Stage Movement Studio V  G 2
Development of special movement skills.
Wi Qtr. 4 cr. Prereq: Permission of instructor.

888 Advanced Stage Movement Studio VI  G 2
Graphing movement principles: review of specific movement principles, graphing them for the acting process.
Sp Qtr. 4 cr. Prereq: 887 or permission of instructor.

893 Individual Studies  G 3-5
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded SU.

900 Advanced Acting Studio VII  G 3
Rehearsal techniques: special emphasis on the style, research, and characterization proper to the plays in the concurrent repertory season.
Au Qtr. 3 2-hr cr. Prereq: 882.

901 Advanced Acting Studio VIII  G 3
Rehearsal techniques: special emphasis on concurrent plays in repertory company season.
Wi Qtr. 3 2-hr cr. Prereq: 980.

902 Advanced Acting Studio IX  G 3
Rehearsal techniques: special emphasis on concurrent plays in repertory company season.
Sp Qtr. 3 2-hr cr. Prereq: 981.

983 Advanced Speech and Voice Studio VII  G 2
Applied phonetics: advanced study of phonetic transcription and structural awareness.
Au Qtr. 4 cr. Prereq: 885.
Advanced Speech and Voice Studio VIII G 2
Stage dialects: process and practical application of phonetic and structural variations in performing dialects. Wi Qtr. 4 cl. Prereq: 983.

Advanced Speech and Voice Studio IX G 2
Character voices: process and practical application of phonetic and structural variations in performing character voices. Sp Qtr. 4 cl. Prereq: 994.

Projects in Acting G 5
Special projects in rehearsal and performance tied to the production of OSU Theatre Company productions. Au, Wi, Sp Qtr.s. 3-2 hr cl and 4-4 hr rehearsals. Prereq: Permission of instructor. Open only to members of OSU Theatre Company. Repeatable to a maximum of 20 cr hrs.

New Works Lab G 3
Laboratory in performer-created works. Au, Wi, Sp Qtr.s. 3 2-hr labs. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

Proseminar G 1
Reading and directed research in theatre history, criticism and literature, and an examination of the theoretical and social dimensions of the theatrical art. Au, Wi, Sp Qtr.s. Arr. Repeatable to a maximum of 18 cr hrs. This course is graded S/U.

Research in Theatre: Thesis G 1-6
Research for thesis purposes only. Su, Au, Wi, Sp Qtr.s. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

Research in Theatre: Dissertation G Arr
Research for dissertation purposes only. Su, Au, Wi, Sp Qtr.s. This course is graded S/U.

Turkish

203 Botany and Zoology Building, 1735 Neil Avenue, 292-9255

Elementary Turkish I U 5
Introduction to Turkish; development of listening, reading, speaking, and writing skills. Au Qtr. 5 cl. Not open to native speakers of this language. Not open to students with 3 or more years of study in this language. Not open to students with 3 or more years of study in this language. This course is available for EM credit. GEC for language, FL Adm. Cond course.

Elementary Turkish II U 5
Further development of listening, reading, speaking, and writing skills. Wi Qtr. 5 cl. Prereq: 101. Not open to native speakers of this language. Not open to students with 3 or more years of study in this language. This course is available for EM credit. GEC for language, FL Adm. Cond course.

Intermediate Turkish I U 5
Development of listening, reading, speaking, and writing skills; reading of simplified literary texts about Turkish culture. Sp Qtr. 5 cl. Prereq: 102. Not open to native speakers of this language. Not open to students with 3 or more years of study in this language. This course is available for EM credit. GEC for language.

Intermediate Turkish II U 5
Reading of Turkish short stories and poems with attention to literary and cultural appreciation; development of basic language skills. Au Qtr. 5 cl. Prereq: 103. Not open to native speakers of this language. Not open to students with 3 or more years of study in this language. This course is available for EM credit. GEC for language.

Turkish Culture U 5
An introduction to Turkish culture through reading of literature and criticism, and watching and viewing of films, slides, and performances arranged for the class. Wi Qtr. 5 cl. GEC arts and hums cultures and ideas course.

Masterpieces of Near Eastern Literatures in Translation
See NELC 272.

Individual Studies U 1-5
Su, Au, Wi, Sp Qtr.s. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

Group Studies U 1-5
Special topics announced in the quarter previous to the one in which the course is offered. Au, Wi, Sp Qtr.s. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

Turkish Sufism U 5
An introduction to the literature, forms of thought, and institutions of Turkish Sufism. Sp Qtr. 2 2-hr cl. Prereq: English 110 or 111 or equiv. No knowledge of Turkish required. GEC arts and hums ill course.

Turkish Literature in Translation U 5
A study of Turkish literature and the history of its discourses, genres, and styles. Wi, Sp Qtr.s. 5 cl. GEC arts and hums ill course.

Advanced Turkish I U 5
Extensive reading from literary texts, with practice in conversation and composition. Wi Qtr. 5 cl. Prereq: 104 or equiv. Not open to students with credit for 294. Wi Qtr 1983 or Wi Qtr 1984.

Advanced Turkish II U 5
The study of nineteenth- and twentieth-century literary texts, with advanced composition and translation. Sp Qtr. 5 cl. Prereq: 401 or equiv. Not open to students with credit for 294 Sp Qtr 1983 or Sp Qtr 1984.

Ottoman Orthography, Conventions, and Style U G 5
Usage and syntax in the old Turkish script, 14th through 20th centuries. Au Qtr. 2 2-hr cl. Prereq: One course in Turkish at the 600-level or above, or permission of instructor.

Classical Turkish Poetry U G 5
Reading and analysis of Turkish poetry of the 13th through 18th centuries; Turkish metrics and literary theory. Wi, Sp Qtr.s. 2 2-hr cl. Prereq: 402 or permission of instructor.

Modern Turkish Poetry and Prose U G 5
Selected topics in poetry and prose of the 20th century; conducted in Turkish. Au, Sp Qtr.s. 5 cl. Prereq: 402 or permission of instructor.

Individual Studies U G 1-5
Su, Au, Wi, Sp Qtr.s. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

Group Studies U G 1-5
Special topics announced in the quarter previous to the one in which the course is offered. Au, Wi, Sp Qtr.s. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work. Su, Au, Wi, Sp Qtr.s. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

Studies in Turkish and Ottoman Literature and Criticism U G 5
Migrations, authors, and critical schools of Turkish and Ottoman poetry and prose. Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs of Turkish literature at the 600 level or equiv, or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Honors Research U 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense. Su, Au, Wi, Sp Qtr.s. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty advisor and ASC Honors Committee approval of project, a minimum 3.50 pt/hr ratio in the field of distinction, or standing, and CPHR commensurate with honors program membership. Repeatable to a maximum of 15 or hrs. This course is graded S/U.

Seminar in Turkish and Ottoman Studies G 5
Intensive study of a specific topic of literary and intellectual culture; preparation of final paper required. Wi Qtr. 2 2-hr cl. Prereq: Permission of instructor. Repeatable to a maximum of 15 or hrs.

Research in Turkish G 1-10
Research for thesis purposes only. Su, Au, Wi, Sp Qtr.s. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.
Twi
486 University Hall, 230 North Oval Mall, 292-3700

101 Elementary Twi I U 5
Development of oral proficiency in elementary conversational Twi using a competency-based approach. Au Qtr. 5 cl. GEC for lang course.

102 Elementary Twi II U 5
Continuation of 101; development of aural and oral skills in elementary conversational Twi using a competency-based approach. Wi Qtr. 5 cl. Prereq: 101. GEC for lang course.

103 Intermediate Twi I U 5
Continuation of 102; further development of listening and speaking skills; introduction of reading as a basis for more oral practice. Sp Qtr. 5 cl. Prereq: 102. GEC for lang course.

104 Intermediate Twi II U 5
Continuation of 103; reading and comprehension exercises; reading from authentic texts. Sp Qtr. 5 cl. Prereq: 103. GEC for lang course.

Ukrainian
232 Cunz Hall, 1841 Millikin Road, 292-6733
See also Slavic Languages and Literatures.

101* Elementary Ukrainian I
Development of oral and written language skills. Not open to native speakers of this language through regular course enrollment or EM credit. FL Admins Core courses.
101.51 Individualized Track U 1-5
Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 hrs before the end of the qtr may proceed to 102.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

102* Elementary Ukrainian II
Development of oral and written language skills. Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. FL Admins Core courses.
102.51 Individualized Track U 1-5
Prereq: 101 or 101.01 or 5 cr hrs of 101.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Students who complete 5 cr hrs before the end of the qtr may proceed to 103.51. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 101.51 and 102.51 concurrently with permission of instructor.

103 Intermediate Ukrainian I
103.51 Individualized Track U 1-5
Development of all four skills: listening comprehension, speaking, reading, and writing. Prereq: 102.01 or 5 cr hrs of 102.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 102.51 and 103.51 concurrently with permission of instructor.

104 Intermediate Ukrainian II
104.51 Individualized Track U 1-5
Continuation of 103.51; development of the four skills. Prereq: 5 cr hrs of 103.51 or permission of instructor. Not open to native speakers of this language through regular course enrollment or EM credit. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 103.51 and 104.51 concurrently with permission of instructor.

405+ Advanced Ukrainian I
405.51 Individualized Track U 1-5
Continued development of the four skills based primarily on reading selections from the contemporary Ukrainian press. Prereq: 5 cr hrs of 104.51 or 111 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 104.51 and 405.51 concurrently with permission of instructor.

407+ Advanced Ukrainian II
407.51 Individualized Track U 1-5
Continuation of 405.51. Prereq: 5 cr hrs of 405.51 or permission of instructor. Students register for and complete from 1 to 5 cr hrs during the qtr. Progress is sequential from one cr hr to the next, with proficiency at the level of 80% required for advancement. Students may register for 405.51 and 407.51 concurrently with permission of instructor.

University College
110 Earison Hall, 154 West 12th Avenue, 292-6344

100 University Survey U 1
Introduction to the University community; strategies for successful transition to and participation in that community; institutional context of academic programs; education and learning as life-long processes; University resources and procedures. Su, Au, Wi, Sp Qtrs. 2 1-hr cl. H100 (honors) decimal subdivisions may be available to students enrolled in an honors program or by permission of college. Students schedule a section of University Survey corresponding to their curricular academic program. Not open to students with credit for Agr 100, Arts&Sci 100, Bus Adm 100, or Engineer 100.

100.01 Business Survey
100.03 Food, Agricultural, and Environmental Sciences Survey
100.05 Allied Medical Professions Survey
100.07 Architecture Survey
100.09 Art Survey
100.11 Arts and Sciences Survey
100.13 Dentistry Survey
100.15 Dental Hygiene Survey
100.17 Education Survey
100.19 Engineering Survey
100.21 General Baccalaureate Survey
100.23 Human Ecology Survey
100.25 Medicine Survey
100.27 Music Survey
100.28 Natural Resources Survey
100.29 Nursing Survey
100.31 Optometry Survey
100.33 Pharmacy Survey
100.35 Social Work Survey
100.37 Veterinary Medicine Survey

Veterinary Biosciences
206 Goss Laboratory, 1925 Coffey Road, 292-5681

610* Humane Preparation and Use of Animals for Physiologic Investigation U G 3
Selection of species, pre-anesthetics, anesthetics, minor surgical procedures, cardiae catheterization, radiography, postmortem examination, and drug therapy as applied to physiologic investigations. Hamlin. Sp Qtr. Prereq: Advanced standing in zoology or Physiol 600 or equiv; permission of instructor. Not open to students with credit for Vet Phys 610. Not open to vet med students.

640* Fundamentals of Oncology P G 4
Lecture/seminars covering aspects of oncology: chemical and biologic carcinogenesis, epidemiology, genetics, developmental biology, biochemistry, cell kinetics, clonality, metastasis, hormonal and immunology factors, and therapy. Capen and Barth. Wi Qtrs. Prereq: Permission of instructor. Not open to students with credit for Vet Path 640. Offered in cooperation with Pathology.

693 Individual Studies P G 1-10
Laboratory, library, conference, and reports concerning animal disease problems. Capen and graduate faculty. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet Med or 3rd year standing. Repeatable to maximum of 50 cr hrs. This course is graded S/U.

696 Advanced Studies in Veterinary Biosciences P G 1-6
Advanced studies in various topics in the fields of Veterinary Biosciences. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet Med or 3rd year standing. Repeatable to a maximum of 20 cr hrs. This course is graded A-E.

700 Applied Functional Neuroanatomy I P G 3
Study of structure and function of autonomic, peripheral, and central nervous systems of infraprimates, with references to primates, as related to clinical neurology, neuropathology, neurosurgery, or neurobiological research. Anatomy faculty. Wi Qtr. 3 cl. Prereq: VM Coll 603, CBNA&Anat 724 or equiv, and permission of dept. Not open to students with credit for Vet A&OB 700.
710 Applied Functional Neuroanatomy II P G 3
An application of the structure and function of the central nervous system of the invertebrates, with reference to primates. Anatomy faculty.
Sp Qtr. 3 cr. Prereq: VM Coll 603, Anatomy 704 or equiv, and permission of dept. Not open to students with credit for Vet A&B 701.

700 Anatomy of Avian and Mammal Laboratory Animals P G 3
A comparative anatomical study of the various species of the avian and mammals and the sub-human primates used in laboratory investigation.
Sp Qtr. 1 cr., 1-5 hr. lab. Prereq: VM Coll 603, Anatomy 704 or equiv. Cross-listed in Animal Sciences and Pharmacy.

710 Applied Veterinary Clinical Pathology P 1
Designed to familiarize the senior veterinary student with the preparation and cytologic interpretation of blood films, body cavity fluids, and tissue aspirates and imprints. Wellman.
Su, Au, Wi, Sp Qtr. Prereq: Vet med 4th yr standing election. Not open to students with credit for Vet Path 710.

711 Basic Macroscopic Pathology P G 2
Interpretation of macroscopic tissue changes in diseases of domestic and exotic animal species, with correlation to pathogenesis. Weisbrode.
Sp Qtr. Prereq: Permission of instructor. Not open to students with credit for Vet Path 736.01.

715 Applied Veterinary Medical Virology P G 3
Major viral pathogens of domestic animals are discussed and illustrated; principles of virology are applicable to the recognition, differentiation, and prevention of diseases of animals are presented. Laimore.
Sp Qtr. Prereq: Permission of instructor. Not open to students with credit for Vet Path 796.05.

718 Diseases of Poultry and Game Birds P G 3
A study of the etiology, recognition, prevention, and control of the important diseases of poultry and related game birds. Swayne and Long.
Au, Wi Qtr. Not open to students with credit for Vet Path 796.06.

717 Current Topics in Veterinary Immunology P G 3
Discussion of current topics in immunology as it relates to domestic animals.
Not open to students with credit for Vet Path 796.07.

718 Advanced Gross Pathology P G 1-5
Advanced training in gross dissection and interpretation of gross lesions in animals. Graduate faculty.
Su, Au, Wi, Sp Qtr. Prereq: Vet med 4th yr standing in vet med. Not open to students with credit for Vet Path 796.08.

719 Basic Histopathology P G 3
Interpretation of pathologic tissue changes in diseases of domestic and exotic animal species, with correlation to pathogenesis. Weisbrode.
Wi Qtr. Prereq: 2nd yr standing. Not open to students with credit for Vet Path 796.09. Each student will be provided with a microscopic slide study set and a microscope.

720 Introduction to Applied Pathology P G 2
Correlation of macroscopic and histologic findings in diseases of domestic and exotic animal species, and the use of these findings in disease pathogenesis.
Sp Qtr. 1-2 hr. lab (Sat). Prereq: Vet med 1st yr standing.

730 Endocrinology P G 5
A study of the functions of the thyroid, parathyroid, pituitary, adrenal, pancreas, gonads, and other organs with possible endocrine functions. Sandelin and Brooks.
Au Qtr. 4 cr. lab. Prereq: Physiol 312 or equiv, organic chem, and permission of instructor. Not open to students with credit for Vet Path 730.

739 Laboratory Medicine P G 1-10
Advanced training in veterinary hematology, cytology, and clinical chemistry; independent study; use of laboratory methods for the characterization of clinical pathology changes in hospitalized patients. Kociba and graduate faculty.
Su, Au, Wi, Sp Qtr. Prereq: DVM degree and grad standing. Not open to students with credit for Vet Path 740. Repeatable.

740 Principles of Toxicology I G 3
Introduction to the principles of toxicology and the factors that influence the expression of drug and chemical induced toxicological effects on major organ systems.
Wi Qtr. 3 cr. Prereq: Biochem 613 or equiv; Physiol 312 or equiv. Not open to students with credit for Anser Sci 740 or Pharmacy 740. Cross-listed in Animal Sciences and Pharmacy.

741 Principles of Toxicology II G 5
Toxicological effects of major classes of chemicals and current issues in toxicology, including air pollution, water quality, and hazardous waste.
Sp Qtr. 5 cr. Prereq: Anser Sci 740 or Pharmacy 740; Biochem 511 or equiv; Physiol 602 or equiv. Not open to students with credit for Anser Sci 741 or Pharmacy 741. Cross-listed in Animal Sciences and Pharmacy.

750 Gas Exchange in the Mammalian Lung P G 2
Introduction to pulmonary ventilation, diffusion of gases and pulmonary blood flow, and how lung structure is optimized for efficient gas exchange. Olson.
Su Qtr. 2-1 hr. Prereq: DVM or enrollment in vet med, or permission of instructor. Not open to students with credit for Vet Phys 750.

751 Professional and Ethical Issues in Biomedical Sciences G 3
A discussion course based on case scenarios dealing with ethical issues facing biomedical researchers, such as publishing practices, confidentiality, monitoring, etc.
Wi Qtr. 2 1-2 hr. cl. Prereq. Currently enrolled in a graduate program in the biomedical sciences. Not open to students with credit for Vet Phys 751. Cross-listed in Pharmacology. Graded S/U.

760 Specialized Study in Veterinary Medicine P 1-16
Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. To be taken during elective yr. Cross-listed in all veterinary medicine depts. Repeatable to a maximum of 16 cr hrs. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

761 Equine Surgical Anatomy P 3
Emphasis on blood and nerve supply to common surgical sites; special emphasis involving methods of anesthetizing selected surgical areas and areas useful in diagnostic procedures for lameness.
Wi Qtr. 1 cr. 1-3 hr. lab. Prereq: VM Coll 521 or equiv, and permission of instructor. Not open to students with credit for Vet A&B 796.01.

762 Ophthalmic Anatomy P G 2
The comparative anatomy, histology, neuroanatomy, and embryology of the orbit and its contents in mammals, birds, and reptiles.
Sp Qtr. Prereq: VM Coll 612 or equiv and permission of instructor. Not open to students with credit for Vet A&B 796.02.

763 Surgical Anatomy of the Dog and Cat P G 4
Surgical and clinical anatomy of the dog and cat as studied by dissection, lecture, prosecution, and palpation.
Sp Qtr. 2 cr. 2-3 hr. labs. Not open to students with credit for Vet A&B 796.03.

778 Applied Veterinary Pharmacology P G 3
General principles of pharmacology, emphasizing those drugs used in the practice of veterinary medicine; application of various techniques and methods of evaluating drug response in animals. Strauch.
Wi Qtr. 2 cr. 2 hr. lab. Prereq: Vet med 2nd yr standing or permission of instructor. Not open to students with credit for Vet Phys 778.

780* Clinical Pharmacology of Antimicrobial Drugs P G 2
A detailed study of the basic principles and clinical pharmacology of antimicrobial and antiparasitic drugs in veterinary medicine; special consideration given to toxicities, drug-drug interactions and dosing regimens.
Su Qtr. 3 cr. Prereq: Vet med 2nd or 4th yr standing or grad standing. Not open to students with credit for Vet Phys 781.

781* Principles of Veterinary Clinical Pharmacology P G 3
Principles of clinical pharmacology and application of kinetic parameters to drug therapy in domestic animals; basis for choice of drug and dosage regimen.
Au Qtr. 3 cr. Prereq: Vet med 2nd or 4th yr standing or grad standing. Not open to students with credit for Vet Phys 781.

790 Comparative Cardiovascular Physiology P G 3
Comparative electrophysiology emphasizing fundamentals and clinical applications. Hamlin.
Au Qtr. 3 cr. Prereq: Vet med 2nd, 3rd, or 4th yr standing; or permission of instructor. Not open to students with credit for Vet Phys 790.

791 Heart Sounds, Murmurs, and Pulse Curves P G 3
Comparative hemodynamics and cardiovascular sound emphasizing apex and echocardiograms and pressure pulses, origins of heart sounds and murmurs; clinical interpretation and clinical pathologic correlation. Hamlin.
Wi Qtr. 3 cr. Prereq: Vet med 2nd, 3rd, or 4th yr standing or permission of instructor. Not open to students with credit for Vet Phys 791.
792* Signs, Symptoms, and Treatment of Cardiopulmonary Disease  P 3
Advanced comparative cardiovascular physiology with emphasis upon circulatory response to stress of various congenital and acquired cardiovascular defects. Hamlin.
Sp Qtr. 3 cl. Prereq: Vet med 2nd or 4th yr standing; or permission of instructor. Not open to students with credit for Vet Phys 792.

794 Group Studies  P G 1-6
Group studies course in areas of comparative physiology and pharmacology. Staff.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor.

796* Techniques in Comparative Reproductive Physiology and Pharmacology  P G 3
Laboratory methods in the study of various phenomenon of reproduction and pharmacology of sex steroids and gonadotropins. Lin.
Sp Qtr. 3-6 hr. Prereq: Vet med and Med 4th yr standing, grad, or permission of instructor. Not open to students with credit for Vet Phys 796.

797* Advanced Comparative Electrocardiography  P G 3-5
Cellular and cardiac electrophysiologic and clinical features of complex cardiac arrhythmias and conduction disturbances. Hamlin.
Wi Qtr. 3 cr additional work for 5 cr hrs. Prereq: 790 or permission of instructor. Not open to students with credit for Vet Phys 795.

800 Seminars in Veterinary Pathology  P 1-5
Su, Au, Wi, Sp Qtrs. 1 cl. Prereq: Permission of instructor. These courses are graded S/U.

800.01 Seminar in Veterinary Clinical Pathology  G 1, 2
Case presentation with emphasis on clinopathologic correlations; specimen evaluation, literature searches, preparation of clinopathologic case reports, and preparation of visual aids. Koebis and graduate faculty.
Repeatable to a maximum of 24 cr hrs.

800.02 Veterinary Histopathology Seminar  G 1
Weekly Histopathology slide seminars.
Repeatable to a maximum of 20 cr hrs.

801 Anatomical Techniques G 2-5
Theory and practice of macroscopic, microscopic, and scanning electron microscopic methods, including specimen preparation for microcirculation studies, fixation, embedding, sectioning, mounting, and staining of animal tissue. Special emphasis is placed upon techniques for the preparation of microcirculation casts for SEM study. Graduate faculty.
Su, Au, Wi, Sp Qtrs. 1 cl, 6-15 lab hrs. Prereq: VM Coll 521, 531 or equiv and permission of instructor. Not open to students with credit for Vet & A&C 801. Repeatable to a maximum of 15 cr hrs.

802 Advanced Veterinary Anatomy G 3-5
Advanced topographical anatomy of domestic animals studied by lecture, prossection, and dissection. Graduate faculty.
1 cl, 1 hr prossection, 2-6 lab hrs. Prereq: Vet med 3rd yr standing, veterinary gross anatomy, and permission of instructor.

802.01 Limbs and Back of Domestic Animals
Not open to students with credit for Vet & A&C 802.01.

802.02 Head and Neck of Domestic Animals
Not open to students with credit for Vet & A&C 802.02.

802.03 Thorax, Abdomen, and Pelvis of Domestic Animals
Not open to students with credit for Vet & A&C 802.03.

803 Muscle Biology and Ultrastructure G 3-5
Structural basis of muscle contraction explored through application of methodology for myofibrillar protein isolation and characterization through electron microscopy.
Wi Qtr. 1-2 hr cl, 1-3 hr lab. Prereq: Permission of instructor. Not open to students with credit for Vet & A&C 803. Repeatable to a maximum of 15 cr hrs.

810* Advanced Systemic Pathology I G 3, 5
An advanced study of animal diseases as they affect all organ systems of the body. Stromberg.
Au Qtr. Prereq: Permission of instructor. Not open to students with credit for Vet Path 810.

811 Advanced Systemic Pathology II G 3, 5
Advanced study of animal diseases as they affect all organ systems of the body. Stromberg.
Wi Qtr. 3-2 hr cl. Prereq: 810. Not open to students with credit for Vet Path 811.

812 Advanced Systemic Pathology III G 3, 5
Advanced study of animal diseases as they affect all organ systems of the body. Stromberg.
Sp Qtr. 3-2 hr cl. Prereq: 810 and 811. Not open to students with credit for Vet Path 812.

815 Veterinary Surgical Pathology G 3-5
Biopsy methods and diagnosis; surgical specimens are studied, and emphasis is placed upon the correlation of lesions and functional pathology. Capen and graduate faculty.
Su, Au, Wi, Sp Qtrs. Prereq: Enrollment in grad program in vet path; DVM and experience in basic histopathology. Not open to students with credit for Vet Path 815. Repeatable to a maximum of 40 hr.

841 Viral Pathogenesis and Oncogenesis G 5
Cellular, immunological and molecular mechanisms involved with virus pathogenesis in animals/humans.
Au Qtr (yearly beginning 1996). 5 cl. Prereq: Med Mirc 701 or equiv and Med Mirc 754. Not open to students with credit for Vet Path 841 or Med Mirc 841. Cross-listed in Medical Microbiology and Immunology.

899 Research Seminar in Veterinary Biosciences  G 1
Presentation of new scientific knowledge in lectures and conferences by faculty and graduate students. Faculty.
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad or professional standing in vet bios. Repeatable to a maximum of 16 cr hrs. This course is graded S/U.

900* Research in Veterinary Biosciences G Arr 1-18
Research for dissertation or thesis purposes only. Graduate faculty.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. This course is graded S/U.

Veterinary Clinical Sciences 369

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622 Advanced Equine Medical and Surgical Procedures P G 1
Au, Wi Qtrs. 3-6 lab hrs. Prereq: Vet med 3rd yr standing and VM Coll 617. For students with an interest in equine medicine and surgery.

622.01 Advanced Equine Medical and Surgical Procedures
Tracheal wash, thoracocentesis, CFS samples, bone marrow biopsies, epidural anesthesia, endoscopy, nerve block, castrations, arthrocentesis, tracheotomy, and cast applications.
Open to grad students with permission.

622.02 Alternative Advanced Equine Medical and Surgical Procedures
Alternative to 622.01 for those students who object to the use of live animals in their education; this course will entail video instruction, assigned reading, and additional rotations in equine medicine and surgery, and field services which must be taken in the 4th yr to cover the subjects in 622.01.

628 Treatment of Musculoskeletal Disorders of Dogs and Cats P 3
Common problems that affect the musculoskeletal system of dogs and cats will be discussed.
Au Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

629 Small Animal Soft Tissue Surgery P 3
Topics in small animal surgery (mainly dog and cat) will be covered, focusing primarily on soft tissue surgery.
Wi Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

655 Photography in the Practice of Veterinary Medicine P 3
Common veterinary photography principles applied in such areas as patient documentation, surgery, gross specimen photography, ophthalmology, and radiography reduction.
Au, Sp Qtrs. 3 cl.

596 Advanced Studies in Veterinary Clinical Sciences P G 1-4
Su, Au, Wi, Sp Qtrs. Prereq: Vet med 2nd, 3rd or 4th yr standing. Repeatable to a maximum of 20 cr hrs.

710 Applied Veterinary Medicine Options
A series of clinical studies offered as electives for 4th year Vet Med students to arrange into an elective program in conjunction with a faculty adviser.
Su, Au, Wi, Sp Qtrs. Clinics, seminars, ward rounds, and 24-hr patient care responsibilities. Prereq: Vet Med 4th yr standing. Repeatable to a maximum of 6 cr hrs unless noted otherwise.

710.01 Receiving/Out-Patient Clinic P 2, 3
Clinical instruction designed to improve the student's proficiency in client relations, diagnosis, treatment, and prevention of diseases in outpatients.

710.02 Small Animal Medicine P 1-5
Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of small animals. Repeatable to a maximum of 10 cr hrs.

710.03 Small Animal Surgery P 2 or 3
The application of principles of surgery to treatment of diseases of companion animals.
710.04 Food Animal Medicine and Surgery P 2 or 3
Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of food animals.

710.05 Equine Medicine and Surgery P 2 or 3
Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of the horse.

710.06 Field Service P 2 or 3
The application of the principles of management, diagnosis, treatment, and prevention of disease in farm and exotic animals in the environment in which they are produced.

Field trips to facilities for patient care, case discussions, seminars, and 24-hr patient care responsibilities.

710.07 Veterinary Clinical Radiology P 2, 3
Diagnostic and therapeutic techniques that will broaden the student's knowledge in clinical diagnosis and treatment.

710.08 Clinical Microbiology P 2, 3
Assignment of patients for in-depth study of diagnosis and course of disease with emphasis on selection and interpretation of laboratory parameters; emphasis on microbiologic and immunologic methods for diagnosis and evaluation of infectious disease.

710.09 Clinical Anesthesiology P 2, 3
The application of principles of anesthesiology.

710.12 Veterinary Clinical Ophthalmology P 2, 3
Application of principles of diagnosis and treatment of diseases of the eye to patients of all species.

710.13 Applied Theriogenology P 2 or 3
Application of principles of diagnosis, treatment, and prevention of diseases of the reproductive system of all species.

Sp Qtr.

718 Clinical Problem Solving and Treatment in Small Animal Internal Medicine P 3
Problem-oriented course using case discussions to teach the diagnostic and therapeutic approach to the most common clinical problems in small animal internal medicine.

Au Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

719 Clinical Problem Solving and Treatment in Small Animal Internal Medicine II P 3
Problem-oriented course using case discussions to teach the diagnostic and therapeutic approach to the most common clinical problems in small animal internal medicine.

Wi Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

720 Veterinary Clinical Nutrition
This course is graded S/U.

720.01 Introduction to Veterinary Clinical Nutrition P 2
Basic animal nutrition and feeding and nutrition-related problems.

Wi Qtr. 2 cl. Prereq: Vet Med 2nd yr standing or permission of instructor.

720.02 Advanced Veterinary Clinical Nutrition P 1-2
Presentation of nutrition-related problems in large and small animal clinical practice.

Sp Qtr. 2 cl.

721 Veterinary Acupuncture P 1
Practical approaches to diagnosis and treatment of clinical cases (dog, cat, horse, cow) by acupuncture of animals in the veterinary hospital.

Sp Qtr. 1 cl. Prereq: Permission of instructor. This course is graded S/U.

724 Topics In Feine Medicine and Surgery P 1
To provide third and fourth year veterinary students with information on selected medical and surgical topics unique to the cat.

Sp Qtr. 1 hr cl. Prereq: Vet med 3rd or 4th yr standing. Professional students only. Not repeatable. This course is graded S/U.

725 Canine and Feline Dentistry P 1
Lectures, demonstrations, and laboratory covering prophylactic care, and extraction of teeth, endodontic and prosthodontic therapy.

Sp Qtr. Prereq: Vet Med 4th yr standing or permission of instructor.

727 Companion Bird Medicine and Surgery P 3
All aspects of companion bird medicine, including husbandry, nutrition, pediatrics, diagnostic and therapeutic techniques, disease problems, radiology, anesthesia and surgery. Emphasis placed on psittacine species.

Wi Qtr. 3 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing or written permission of instructor.

730 Topics in Equine Sports Medicine P 3
Current concepts of diagnosis and treatment of diseases that limit athletic performance of the horse.

Wi Qtr. 4 cl. Prereq: Vet Med 4th yr standing.

731 Topics in Equine Medicine P 1
A seminar course covering recent "classic" articles from the literature.

Sp Qtr. 1 cl. Prereq: Vet Med 4th yr standing.

732 Equine Lameness and Gait Abnormalities P 2
To acquaint the student with conditions of the horse that produce gait abnormalities as the presenting clinical complaint.

Wi Qtr. 2 cl. Prereq: Vet Med 3rd yr standing. Repeatable to a maximum of 4 or hrs.

733 Equine Medicine and Surgery P 2
A course to provide professional students with knowledge to diagnose, treat and prognosticate common medical and surgical diseases of horses.

Au Qtr. 2 lec. Prereq: Vet Med 4th yr standing.

734 Equine Soft Tissue Surgery P 3
Practical approach to most frequently encountered soft tissue problems in equine practice. Includes rationale for decision-making, procedures, and comprehensive case management.

Sp Qtr. 3 cl. Prereq: Vet Med 4th yr standing.

735 Clinical Equine Lameness P 1
Techniques in equine lameness evaluation. Emphasis on clinical evaluation and cases.

Sp Qtr. 2 lab hrs. Prereq: Vet med 2nd yr standing. This course is graded S/U.

736 Diseases of Sheep P 3
Lecture, discussion, and demonstration of diagnosis, treatment, and prevention of sheep diseases including field surgery and management. Goat diseases may also be discussed; time permitting one or more labs will be held.

Wi Qtr. Prereq: 2nd, 3rd, or 4th yr standing.

738 Pleasure Horse Medicine P 2
Review of prevention, diagnosis, and treatment of diseases which are common problems of pleasure horses.

Au Qtr. 2 lec. Prereq: Vet Med 2nd, 3rd, or 4th yr standing.

740 Analysis of Pharmacological Systems I P 3
Analysis of several pharmacological systems using a combination of classical mathematical analysis, model building, and newer analog and digital techniques.

Sp Qtr. 3 cl. Prereq: Permission of instructor.

741 Zoo Animal Medicine P 1
Discussion and illustrations covering chemical restraint, maintenance of animal health, disease prevention and treatment, past history discussions, and other duties confronting zoo veterinarians.

Wi Qtr. 1 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing.

742* Analysis of Pharmacological Systems II P 3
Continuation of 740; comparison of existing methods for estimating kinetic parameters.

Su Qtr. 3 cl. Prereq: Permission of instructor.

743 Pocket Pet Medicine P 2
Basic medicine, surgery, and husbandry for pocket pets, including rabbits, ferrets, guinea pigs, mice, rats, gerbils, chinchillas, and hamsters.

Au Qtr. 2 cl. Prereq: Vet Med 2nd, 3rd, or 4th yr standing.

744 Reptile Medicine P 3
Covers husbandry, medicine, anesthesia and surgery for captive reptiles.

Wi Qtr. 2 cl and labs arr. Prereq: Vet Med 3rd or 4th yr standing.

745 Applications of Microcomputers to Veterinary Medicine P 2
Hardware, software, and applications to veterinary medicine.

Wi Qtr 2 cl. Prereq: Vet Med 4th yr standing.

746 Cattle Diseases P 5
Medical diagnosis and therapy of individual cattle. The course will teach students medicine and surgery of individual cattle.

Au Qtr. 5 cl. Vet Med 2nd, 3rd, or 4th yr standing.

747 Small Ruminant Diseases P 3
Diagnosis and therapy of common medical and surgical disorders in small ruminants. This course is organized in an age-related, problem-oriented manner.

Wi Qtr. 3 cl. Prereq: Vet Med 3rd yr standing.

748 Ruminant Theriogenology P 3
Applied clinical reproduction (medicine and surgery) in the bovine, ovine and caprine species. The emphasis is on the individual animal, not the herd/flock.

Wi Qtr. 3 cl. Prereq: VM Coll 605 or DVM degree. This is a lecture course intended to prepare veterinary students for food animal/mixed practice.
760 Specialized Study in Veterinary Medicine P 1-15
Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. To be taken during elective qtr. Cross listed in all veterinary medicine depts. Repeatable to a maximum of 16 cr hrs. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded SU.

761 Advanced Clinical Veterinary Neurology P 2
Components of a neurologic history including neurologic examination, interpretation, localize a lesion in the nervous system, selection and interpretation of appropriate diagnostic tests.
Wi Qtr (every year), 2 cl. Prereq: Vet Med 3rd or 4th yr standing.

762 Clinical Veterinary Ophthalmology P 2
A problem-based approach to differential diagnosis, final diagnosis, and treatment of ophthalmic diseases in large and small animals.
Wi Qtr. 2 cl. Prereq: Vet Med 3rd or 4th yr standing. Problem-based learning format; graded S/U.

764 Design and Analysis of Comparative Biomedical Research I P 3
Theory and application of basic statistical concepts as they affect design, analysis, and interpretation of biomedical research.
Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing; or permission of instructor. Not open to students with credit for 640 or Prev Med 764 or Vet Prev 764. Cross-listed in Preventive Medicine and Veterinary Preventive Medicine.

770 Orthopedic Conference P 2
Practical application of advanced surgical techniques for treatment of diseases of the skeletal system requiring surgery.
Sp Qtr. 2 conferences per week. Prereq: Vet med 4th yr standing or permission of instructor.

775 Design and Analysis of Comparative Biomedical Research II P 3
Continuation of 764.
Wi Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing; or permission of instructor. Not open to students with credit for 641 or Vet Prev 775.

780 Diagnostic Contrast Radiology P 1-2
Routine contrast studies of the digestive, urinary, and nervous systems, with emphasis on techniques and contrast materials; small groups of students will perform each of the procedures.
Au, Wi, Sp Qtrs. Prereq: Vet med 3rd or 4th yr or grad standing.

782 Pharmacology of Cardiac Drugs P 3
Clinical evaluation, pharmokinetics, and pharmacotherapy of cardiac dysrhythmias.
Wi Qtr. 2 cl. Prereq: 3rd or 4th yr or grad standing. Not open to students with credit for Vet Phys 782.

790 Advanced Theriogenology Seminar P 1
Review of current theriogenology literature placing primary emphasis on experimental design, procedures, and scientific conclusions of reported work; each student will orally describe and prepare a written research protocol.
Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to maximum of 15 cr hrs.

791 Reproductive Techniques
Au, Wi Qtrs. Prereq: Vet med 3rd yr standing.

791.01 Equine Theriogenology P 4
The lectures and laboratory experiences are designed to present material covering frequently occurring reproductive abnormalities and reproductive management desirable to obtain maximal reproductive efficiency.
Au Qtr. 3 lecture hrs and 2 lab hrs. Prereq: Vet Med 3rd yr standing or permission of instructor.

791.02 Bovine Reproductive Techniques P 2
Evaluation of the bovine reproductive system including pregnancy diagnosis, breeding soundness evaluation, and artificial insemination techniques.
Wi Qtr. 1 cl, 1-2 hr cl. Prereq: Vet Med 3rd yr standing.

791.03 Canine Theriogenology P 2
This course will present information on canine theriogenology in lecture, discussion and laboratory format.
Wi Qtr. 2-hr lab, 1-hr lecture. Prereq: Vet Med 3rd yr or grad standing. Evaluation will be based on laboratory participation and written examination.

792 Advanced Theriogenology Laboratory P 2
A laboratory for the application of research, diagnostic and therapeutic techniques involving the reproductive system of domestic animals.
Au, Wi, Sp Qtrs. Prereq: Grad standing or permission of instructor. Repeatable to a maximum of 18 cr hrs.

793 Individual Studies P 1-8
A supervised critical investigation of some aspects of animal disease about which there is a mutual curiosity on the part of both the student and faculty.
Su, Au, Wi, Sp Qtrs. Prereq: Vet med 3rd or 4th yr standing, adequate clinical training and written permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded SU.

796 Advanced Studies in Veterinary Clinical Sciences

796.01 Advanced Topics in Equine Surgery G 3
Practical application of advanced surgical techniques for treatment of diseases of horses.
Wi Qtr. 3 cl. Prereq: Grad students with DVM degree.

796.02 Advanced Equine Lameness P 1-3
Study of the methods used for diagnosis and treatment of diseases causing lameness in horses; includes radiographic and surgical techniques.
Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

796.03 Advanced Gastroenterology P 1-8
Study of diagnosis, treatment, and prevention of diseases of the gastrointestinal system.
Su, Au, Wi, Sp Qtrs. Prereq: Vet med 4th yr standing or written permission of instructor. Repeatable to a maximum of 30 cr hrs.

800 Research Methods G 2
Development of a research grant including formation, research, statistical analysis of data, preparing, submitting and editing a grant.
Au Qtr (Odd years), 1 cl. Prereq: DVM or equiv or permission of instructor.

822 Veterinary Internal Medicine
Prereq: DVM or equiv or permission of instructor.

822.06 Advanced Veterinary Nephrology and Urology G 2
Diagnostic methods, pathophysiology and treatments of the major disease syndromes of dogs and cats (some comparison to horses and cattle).
Au Qtr. 2 cl. Offered autumn quarter every 3 years beginning with Autumn 1998.

850 Seminar in Veterinary Clinical Sciences G 1
Su, Au, Wi, Sp Qtrs. 1 hr per wk in seminar. Prereq: The degree Doctor of Veterinary Medicine. Repeatable to a maximum of 10 cr hrs.

850.04 Clinical Pathophysiology Cases in Small Animal Medicine
Detailed clinical approach to small animal internal medicine cases to include an understanding of the differential diagnoses and associated pathophysiology mechanisms of disease.
Au, Wi, Sp Qtrs. 1 cl. Prereq: DVM or equiv or permission of instructor. This course is graded S/U.

850.08 Veterinary Neurology Seminar
Provide a clinical case oriented approach. Discussion of pathophysiology of diseases of the central and peripheral nervous system; emphasis on comparison between species.
Au, Wi, Sp Qtrs. Prereq: DVM or equiv or permission of instructor. This course will be graded S/U.

999 Research in Veterinary Clinical Sciences G Arr 1-18
Research for thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

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510 Principles of Epidemiology P 4
Descriptive and analytical epidemiology, including design, analysis, and interpretation of results; veterinary economics and information handling techniques; host, agent, and environmental factors in disease causation.
Au Qtr. 3 cl and 2 lab hrs. Prereq: Vet med 1st yr standing.

520 Topographic Anatomy (Canine) P 5
Body and its components as forms, relationships, and mechanical functioning.
Au Qtr. 2 cl, 3-2 hr labs. Prereq: Vet med 1st yr standing.

521 Topographic Anatomy (Equine) P 4
Continuation of 520.
Wi Qtr. Prereq: Vet med 1st yr standing.
522 Topographic Anatomy (Food Animals) P 4
Continuation of 521.
Sp Qtr. 2 cl, 2 lab hrs. Prereq: Vet med 1st yr standing.

525 Principles of Diagnostic Radiology P 1
Principles behind the imaging modalities of radiology.
Au Qtr. Prereq: Vet med 1st yr standing in vet med.

526 Principles of Radiographic Interpretation P 1
Introduction to principles of radiographic interpretation, including general principles as well as specific strategies for musculoskeletal, thoracic and abdominal image interpretation.
Wi Qtr. 1 cl. Prereq: Vet med 1st yr standing.

530 Microscopic and Developmental Anatomy I P 5
Study of microscopic and ultrastructural features of cells and tissues, as well as basic fetal development.
Au Qtr. Prereq: Vet med 1st yr standing.

531 Microscopic and Developmental Anatomy II P 4
Correlated study of the development, microscopic structure, and ultrastructural morphology of organ systems.
Wi Qtr. Prereq: Vet med 1st yr standing.

540 Structure and Function of Cells P 5
Introduction to structure and function at cellular level including physiological principles of homeostasis, energetics, metabolism, enzymes, nutrition, and growth.
Au Qtr. Prereq: Vet med 1st yr standing.

550 Comparative Biology of Disease P 5
An interdisciplinary study of the interactions between disease producing agents, body systems, tissues, cells, subcellular units, and selected drugs.
Prereq: Vet med 1st yr standing.
550.01 Comparative Biology of Disease I
Wi Qtr.
550.02 Comparative Biology of Disease II
Wi Qtr.

560 Introduction to Veterinary Profession: Ethics and Jurisprudence P 1
560.01 Introduction to Veterinary Professions: Ethics and Jurisprudence
Problems faced by the practicing veterinarian in relation to the Ohio code, the law, ethics, and communications.
Au Qtr. Prereq: Vet med 1st yr standing.
560.02 Ethics and Jurisprudence in the Veterinary Career
Focus on analysis of ethical and legal issues associated with the art of veterinary medicine practice and establishment of optimal veterinarian-client-patient relations.
Wi Qtr. Prereq: Vet med 1st yr standing.

561 Pharmacology P 3
Basic principles of pharmacology, therapeutics, and chemotherapy of disease.
Sp Qtr. 3 cl. Prereq: Vet med 1st yr standing.

562 Introduction to Anesthesiology P 2
Introduction to anesthesia.
Sp Qtr. Prereq: Vet med 2nd yr standing.

563 Introduction to Surgery P 3
Introduction to surgery.
Sp Qtr. 2 cl, or 1 2-hr lab. Prereq: Vet med 2nd yr standing.

564 Clinical Veterinary Therapeutics P 3
Principles of chemotherapy of bacterial, fungal, viral, and parasitic infections; application of basic principles for chemotherapy of neoplastic disease.
Wi Qtr. 3 cl. Prereq: Vet med 3rd yr standing.

600 Cardiovascular System P 6
A comparative study of the structure, function, and dysfunction of the cardiovascular system including anatomy, abnormal flow, congenital disease, etiologic agents, diagnostic methods, and therapeutic approaches.
Au Qtr. Prereq: Vet med 2nd yr standing.

601 Respiratory System P 5
A comparative study of the structure, function, and dysfunction of the respiratory system including reaction to injury, ventilation defects, pneumonias, neoplastic disease, radiological diagnosis, and therapeutic approaches.
Au Qtr. 5 cl. Prereq: Vet med 2nd yr standing.

602 Urinary System P 5
A comparative study of the structure, function, and dysfunction of the urinary system including diseases of the kidney, bladder, and urethra, and their diagnosis and treatment.
Wi Qtr. 5 cl. Prereq: Vet med 2nd yr standing.

603 Neurobiology P 6
Comparative study of structure, stressing functional anatomy, normal physiology, and the examination of the nervous system.
Sp Qtr. 6 cl. Prereq: Vet med 1st yr standing.

604 Endocrine System P 5
A comparative study of the structures, function, and dysfunction of the endocrine system including diseases of each endocrine organ and their relationships to whole body functions.
Sp Qtr. 5 cl. Prereq: Vet med 1st yr standing.

605 Reproductive System P 5
A comparative study of the structure, function, and dysfunction of the reproductive system including etiologic, pathologic, pathophysiologic, therapeutic, and preventive aspects of reproductive diseases.
Sp Qtr. 5 cl, 2 labs. Prereq: Vet med 2nd yr standing.

606 Integumentary System P 5
A comparative study of the structure, function, and dysfunction of the integumentary system including infectious and parasitic diseases, diagnosis, treatment, and prevention.
Sp Qtr. 5 cl, or 4 cl and 2 labs. Prereq: Vet med 2nd yr standing.

607 Musculoskeletal System P 6
A comparative study of the structure, function, and dysfunction of the musculoskeletal system including congenital and acquired diseases, their radiographic diagnosis, treatment, and prevention.
Wi Qtr. 6 cl. Prereq: Vet med 2nd yr standing.

608 Non-Mammalian and Avian Medicine P 2
Basic study of avian, reptile, amphibian and fish medicine including anatomy, physiology, pathogenesis of disease, diagnosis, treatment, and disease prevention and control
Sp Qtr. Prereq: Vet Med 2nd yr standing.

609 Digestive System P 6
A comprehensive study of the gastrointestinal system of domestic animals.
Wi Qtr. 6 cl or equiv lab hrs. Prereq: Vet Med 2nd yr standing.

610 Sustainable Parasite Control P 2
Epidemiological approach to sustainable parasite control for major parasites of the digestive system of large and small animals.
Sp Qtr. 2 cl. Prereq: Vet Med 2nd yr standing.

611 Veterinary Preventive Medicine P 4
Introduction to prevention and control of disease in the human and animal populations with emphasis on the important role of the veterinarian in these activities.
Wi Qtr. 3 cl, 2 lab hrs. Prereq: Vet med 3rd yr standing.

612 Introduction to Veterinary Ophthalmology P 2
Comparative anatomy, histology and physiology of the normal and abnormal eye and adnexa of domestic animals.
Au Qtr. 2 cl. Prereq: Vet med 3rd yr standing.

613 Fluid Therapy P 1
Principles and applications of fluid therapy in small and large animals.
Wi Qtr. 1 cl. Prereq: Vet med 2nd yr standing.

615 Small Animal Medical and Surgical Techniques P 4
Clinical instruction in medical and surgical techniques; application of surgical techniques to treatment of diseases of small animals.
Au, Wi Qtrns. 1 cl, 16 lab hrs/wk. Prereq: Vet Med 3rd yr standing. Not open to students with credit for 620.

616 Food Animal Medicine Techniques and Diagnostic Procedures P 3
Laboratory instruction in microbiology, parasitology, and radiology: instruction and self-study in minor techniques for large animals.
Au, Wi Qtrns. 9-13 lab hrs. Prereq: Vet med 3rd yr standing.

617 Basic Equine Medical and Surgical Procedures P 1
Laboratory and self-instruction in equine techniques.
Au, Wi Qtrns. 3-6 lab hrs. Prereq: Vet med 3rd yr standing.

618 Hemato-Lymphatic System P 5
A comparative study of the hemato-lymphatic system with emphasis on dysfunction immunologic diseases diagnosis, treatment and prevention of hematopoietic disease.
Au Qtr. Prereq: Vet med 2nd yr standing.
619 Alternative to Small Animal Medical and Surgical Techniques P 4
Surgical instruction to third-year veterinary students who are opposed to performing surgery on animals required for that purpose. Au Qtr. 3-wk rotation during 3rd-quarter break. Prereq: Vet med 3rd yr standing.

640 Veterinary Toxicology P 3
Study of toxic substances affecting domestic animals including major types of poisons, sources, mechanisms of action, diagnosis, and treatment. Au Qtr. 3 cl. Prereq: Vet med 3rd yr standing.

646 Laboratory Animal Medicine P 2
Study of diseases of laboratory animals with a focus on prevention, control, and eradication. Au Qtr 2 cl. Prereq: Vet med 3rd yr standing.

689 Practicum in Veterinary Medicine P 6
Applied veterinary experiences offered to fourth-year veterinary students which enhance their skills in areas such as medicine, surgery, dentistry, research, etc. Su, Au, Wi, Sp Qtrs. Arr. Prereq: Vet med 4th yr standing on elective qtr. This course is graded S/U.

690 Veterinary Medicine Senior Clinics P 2
Supplement to Trimester III senior clinical rotations. Au, Wi Qtrs. Prereq: Vet med 4th yr standing. This course is graded S/U.

696 Advanced Studies in Veterinary Medicine P 1-6
Advanced studies in areas of general veterinary medicine such as international veterinary medicine, education, etc. Su, Au, Wi, Sp Qtrs. Arr. Prereq: 1st yr standing in Vet med. This course is graded A-E.

700 Applied Veterinary Medicine
A series of clinical studies offered fourth-year veterinary medical students as part of the core curriculum. Staff. Su, Au, Wi, Sp Qtrs. Clinics, seminars, case discussions, and 24-hr patient care responsibilities. Prereq: Vet med 4th yr standing. Repeatable to a maximum of 32 hrs.

700.01 General Practice P 4
Clinical instruction in client relations, diagnosis, treatment, and prevention of diseases in out-patients.

700.02 Small Animal Medicine P 8
Clinical instruction and experience in the diagnosis, treatment, and prevention of diseases of small companion animals.

700.03 Small Animal Surgery P 8
The application of principles of surgery to treatment of diseases of companion small animals.

700.04 Food Animal Medicine and Surgery P 8
Application of principles of diagnosis, treatment, and prevention of diseases of food animals.

700.05 Equine Medicine and Surgery P 8
Application of principles of diagnosis, treatment, and prevention of diseases of equine patients.

700.06 Equine Field Services P 3
Application of principles of management, diagnosis, treatment and prevention of diseases in horses in environment in which they are raised.

700.07 Radiology P 4
Application of radiographic principles to diagnosis of diseases of animals.

700.08 Preventive Medicine P 6
Intensive practical training in preventive medicine applied to public health and animal health; emphasis on herd health management, food hygiene, laboratory animals, public service, and control of livestock and poultry diseases. Seminars, field trips, problem solving.

700.09 Clinical Anesthesiology P 4
Provides supervised experience in hospital-based anesthesia practice. Students anesthetize patients for surgical as well as diagnostic procedures. Seminars supplement clinical patient management.

700.10 Large Animal Ambulatory Clinics P 3
Provides student the experience of working in a large animal clinic, including patient and business management aspects. Provides instruction in production medicine and its role in modern agriculture.

700.11 Intensive Care Clinics P 3
Application of principles of diagnosis and therapy to acutely ill companion animal patients.

700.12 Veterinary Clinical Ophthalmology P 2
Application of principles of diagnosis and treatment of diseases of the eye to patients of all species.

700.14 Applied Pathology P 3
Training in gross dissection and interpretation of gross and microscopic pathologic lesions in animals.

700.15 Dermatology P 2

700.16 Emergency Medicine and Surgery P 6
Provides students supervised experience in hospital-based emergency practice, both equine and small animal. Seminars supplement clinical patient management.

700.18 Alternative to Preventive Medicine P 6
Alternative to 700.08 in which pocket pets are supervised for experience with lab animals, and experience in the Raptor Ward or Ohio Dept. of Agriculture is substituted for work with poultry. Similar to 700.06, plus 4 hrs/wk for pocket pet alternative and one qtr experience in Raptor Ward.

Veterinary Preventive Medicine
239 Sisson Hall, 1900 Coffey Road, 292-1206

650 Methods for the Critical Review of Biomedical Literature P Q 2
Methods and practice in analyzing strengths and weaknesses of published research and clinical papers; methods and practice in writing scientific critiques. McClure. Au Qtrs. 1 1/2 hr cl. Prereq: Professional student in any health discipline or grad standing. This course is graded S/U.

653 Individual Studies P Q 1-5
Laboratory and library investigations of animal disease problems involving veterinary preventive medicine. Staff. Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

696 Advanced Studies in Veterinary Preventive Medicine P 1-6
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

700 Molecular Epidemiology of Infectious Diseases P 3
Provides students with the knowledge and skills to study disease outbreaks in livestock using molecular biology techniques. Sp Qtr. 1 1/2 hr cl. Prereq: 750, Prev Med 800, or permission of instructor.

710 Introduction to Production Medicine P 2
This course will introduce the basics of concern that modern food animal practitioners face and the decisions in everyday practice. Sp Qtr. Prereq: 3rd qtr Vet med 2nd yr standing; Vet med 4th yr standing with permission of instructor. Will serve as a prerequisite for second-year students who wish to take Vet Prev 711.01 the following quarter.

711 Applied Veterinary Medicine Options P 2 or 3
A series of field studies offered as electives for fourth-year veterinary students to arrange into an elective program in conjunction with a faculty adviser. Su, Au, Wi, Sp Qtrs.

711.01 Herd Health Problems
Field instruction and experience in comprehensive disease prevention, nutritional, reproductive, and economic services in modern confinement and conventional livestock production.

711.02 Public Service Problems
Instruction and experience in animal and human disease (zoonoses) prevention, control, and eradication as provided by public service veterinarians in local, state, and national agencies. Neer.

711.03 Laboratory Animal Problems
Instruction and experience in diagnosis and prevention of laboratory animal disease in operating, breeding, and experimental colonies of various species. McClure.

715 Veterinary Public Service P Q 3
Practices of public service directed at animal and public health in international, national, state, and local agencies with emphasis on planning, decision making, and budgeting; interaction of veterinarian and other health workers. Au Qtr.

730 Immunology of Parasitic Infections P Q 3
A discussion of the role of immunity in the production course, pathogenicity, diagnosis, and control of parasitic infections of man and/or domestic animals. Satirga. Au Qtr. 2 cl. Prereq: Basic course in parasitology and immunology; permission of instructor. Repeatable to a maximum of 6 cr hrs. Content varies according to major interests of class. Protozoa-articulata taught in odd yrs; helminths in even yrs. Not open to students with credit for Microbiol 730. Cross-listed in Microbiology.

750 Veterinary Practice and Hospital Management P 3
Basic principles of hospital and practice management including insurance, partnerships, corporations, accounting, taxes, employees, and general management procedures. Wi Qtr. 3 cl. Prereq: Vet med 3rd or 4th yr standing.
760 Specialized Study in Veterinary Medicine P 1-18
Field or lab study encompassing the various areas in the field of veterinary medicine through an approved off-campus experience with qualified professionals.
Su, Au, Wi, Sp Qrs. Arr. Prereq: Vet med 4th yr standing and permission of instructor. To be taken during elective yr. Cross listed in all veterinary medicine departments. Repeatable to a maximum of 16 cr hrs. Students must serve at least 4 wks in one experience to receive minimum elective cr. This course is graded S/U.

780 Veterinary Epidemiology P G 3
The use of descriptive and analytical epidemiologic methods in the study of infectious and noninfectious disease problems affecting various animal populations. Hoblet.
Wi Qtr. 3 cl. Prereq: 78A, Prev med 300 or equiv, or enrolled as prof or grad student in med or vet med.

785 Biological Research Techniques P G 3
Lectures and laboratory exercises in laboratory techniques commonly used in biological research. Bach-Nielson.
Su, Au, Wi, Sp Qrs. 2 2-hr cl. and lab. Prereq: Advanced standing in biological sciences. Microb 601, 602, or equiv, and permission of instructor.

796 Advanced Studies in Veterinary Preventive Medicine
A course providing small group instruction in the topics designated.
Su, Au, Wi, Sp Qrs. Repeatable to a maximum of 30 cr hrs.

795.01 Public Health-Organization, Environmental Health, Food-Borne Ilnesses P G 1-8
Deals with the application of public health principles to the solution of community problems. Gordon.
Au, Wi, Sp Qts 2 cl. Prereq: Permission of instructor.

795.02 Prevention of Communicable Diseases P G 3
Discussion of the epidemiology of communicable diseases of animals and fundamental approaches used by state and federal animal health agencies for prevention, control, and eradication. Bach-Nielson.
Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing.

795.03 Food-Borne Ilnesses and Human Health P G 2-4
Detailed study of principal zoonotic diseases transmitted by meat foods and food-borne intoxications and infections as related to personal hygiene of food handlers and sanitary food handling practices; the epidemiological approach to problem solving. Gordon.
Wi Qtr. Prereq: Vet med 3rd or 4th yr standing.

795.04 Applied Food Hygiene P G 2-4
Ante-mortem and post-mortem inspection procedures; disposition of diseased carcasses and parts—applied pathology as relates to meat inspection. Meat chemistry and processing; environmental sanitation; food microbiology. Gordon.
Au Qtr. Prereq: Vet med 3rd or 4th yr standing.

795.05 Environmental Sanitation P G 3
Students are provided an environmental sanitation book; discussions related to animal and food hygiene will concentrate on housing, ventilation, waste disposal, soil, water, air, etc. Gordon.
Sp Qtr. Prereq: Vet med 4th yr standing.

795.06 Disease Control in Dairy Cattle P G 4
Principles and applications of preventive medicine in establishing and maintaining dairy herd health programs and laboratory practices in mastitis control. Hoblet.
Au Qtr. 2 1-hr cl. 1-2 hr lab. Prereq: Vet med 3rd or 4th yr standing, and VM Coll 605.

795.07 Laboratory Animal Medicine P G 2
Diseases of sub-human primates, rodents, and exotic animals utilized in biomedical research and teaching, includes preventive medicine and public health as it applies to animal facilities. McQuire.
Wi Qtr. 2 cl. Prereq: Vet med 3rd or 4th yr or grad standing or permission of instructor.

795.08 Diseases of Swine P 3
Discussion of swine diseases and herd health programs with emphasis on diagnosis, prevention, control and treatment.
Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing.

795.09 Economics of Food Animal Health P G 3
Discussion of economic principles as they apply to the evaluation of food animal preventive medicine programs and disease. Miller.
Sp Qtr. Prereq: Vet med 4th yr standing.

795.12 Literature of Production Medicine P G 1
Review and discussion of current, selected refereed literature in production medicine.
Au, Wi, Qtr. 1-hr cl. Prereq: Vet med 3rd of 4th yr or grad standing. Repeatable to a maximum of 2 cr hrs.

795.13 Applied Dairy Nutrition U P G 3
Applied principles of dairy nutrition and the intricacies of the feed industry.
Wi Qtr. 3 cl. Prereq: 796.05 or Animl/Dairy/Ptrry Sc 430 or equiv; vet med 3rd or 4th yr, grad standing or permission of instructor.

795.14 Swine Production Medicine P 3
Discussion of the components of a swine production medicine program.
Au Qtr. 3 cl. Prereq: Vet med 2nd, 3rd or 4th yr standing.

797 Wildlife Disease Ecology U P G 2
Topics in wildlife disease ecology as it relates to habitat quality, population regulation, wildlife management, and its implications for human and domestic animal health.
Sp Qtr. 2 cl. Prereq: Vet Med or grad standing; also, undergrads in the College of Food, Agricultural, and Environmental Sciences, College of Biological Sciences or School of Natural Resources.

798 Applied Avian Medicine P G 1
Review and discussion of current avian medicine topics as applied to a production medicine environment; diagnostics and prevention and control strategies.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of Instructor. Repeatable to a maximum of 9 cr hrs. This course is graded S/U.

810 Principles of Epidemiology G 2
Discussion of principle theories and philosophies of epidemiology and scientific investigation.
Wi Qtr. 1 2-hr cl. prereq: Grad standing.

850 Seminar in Veterinary Preventive Medicine
Au, Wi, Sp Qtrs. Repeatable to a maximum of 3 cr hrs.

850.01 Seminar in Veterinary Preventive Medicine G 1
This course is graded S/U.

850.02 Seminar in Veterinary Preventive Medicine G 1
Group discussions of appropriate methodology and statistical analysis to meet objectives of investigators presenting seminars.
Au, Wi Qtrs. 2 cl. Prereq: Grad standing with DVM degree. Repeatable to a maximum of 4 cr hrs.

999 Research in Veterinary Preventive Medicine G Arr 1-18
Research thesis or dissertation purposes only.
Su, Au, Wi, Sp Qtrs. This course is graded S/U.

Vocational Education, Comprehensive

208 Agricultural Administration Building, 2120 Fyffe Rd, 292-6321

881 Vocational Education Seminar G 1-3
An interdisciplinary seminar on state-of-the-art trends, and issues in comprehensive vocational education.
Au, Wi, Sp Qtrs. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

893 Individual Studies in Vocational Education G 1-3
Individual research and study on approved topics in comprehensive vocational education.
Su, Au, Wi, Sp Qts. Arr. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

894 Group Studies in Vocational Education D 1-3
Selected topics directly related to comprehensive vocational education.

999 Research in Vocational Education G Arr
Individual dissertation research on problems of significance in comprehensive vocational education.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Permission of adviser. Repeatable. This course is graded S/U.

Welding Engineering

210 Baker Systems Engineering, 1971 Neil Avenue, 292-6239

293 Individual Studies in Welding Engineering U 1-5
Topics in welding engineering of individual interest at the undergraduate level; must be arranged with a member of the department faculty.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs. This course is graded S/U.

300 Survey of Welding Engineering U 3
Principles of welding engineering, including processes, materials effects, design, and quality assurance and codes. Algbridge.
Au Qtr. 3 cl. Prereq: Concurs Physics 133, minimum CYPH 2.00, acceptance as Welding Engineering major.

350 Introductory Welding Laboratory I U 1
Demonstration of fundamental working knowledge of manual arc welding, Au Qtr. 1 8-hr lab. Concurs: 300 and acceptance as a Weld Eng major or written permission of chairperson.
351 Introductory Welding Laboratory II U 1
Demonstration of a fundamental working knowledge of semi-automatic arc welding.
Wi Qtr 3-4hr lab. Concur: 350 and acceptance as a Weld Eng major or written permission of chair/person.

400 Chemistry of Welding and Joining Processes U 3
Study of the chemical principles occurring during joining processes. Howden.
Sp Qtr 3 cl. Prereq: 300.

489 Industrial Experience I U 1
Experiences in an industrial organization and the submitting of an acceptable report on the work done. Howden.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. One qtr full time or equiv part-time field experience.

500 Physical Principles in Welding Engineering I U 3
Study of the application of electric and magnetic principles in welding engineering. Richardson.
Au Qtr 3 cl. Prereq or concur: 300 and Elec Eng 300.

550 Physical Principles in Welding Engineering I—Laboratory U 1
Experiments with the application of electric and magnetic principles in welding engineering. Richardson.
Au Qtr 1 3-4hr lab. Concur: 500 and a second writing course.

600 Physical Principles of Welding Engineering II U G 3
Study of physical principles involved in welding processes and nondestructive evaluation. Altschuld.
Wi Qtr 3 cl. Prereq: 500, Eng Mech 440, GEC course.

601 Welding Applications U G 3
Manual, semi-automatic arc welding processes with emphasis on process physics and applications. Dickinson.
Sp Qtr 3 cl. Prereq: 600. Safety related equipment and procedures required.

605 Principles of Welding Process Control U G 3
Study of principles and practical application of control systems and control elements of welding processes. Farson.
Wi Qtr 3 cl. Prereq: 500 or permission of instructor.

610 Introduction to Welding Metallurgy U G 3
Application of physical metallurgy principles to nonequilibrium thermo/mechanical conditions associated with welding. Lipold.
Sp Qtr 3 cl. Prereq: MartschEn 542/542.01. Safety related equipment and procedures required. GEC course.

611 Welding Metallurgy I U G 3
Study of the metallurgy and welding of transformable steels. Howden.
Au Qtr 3 cl. Prereq: 610 or permission of instructor. Safety related equipment and procedures required.

612 Welding Metallurgy II U G 3
Welding metallurgy and weldability of stainless steels, aluminum alloys and nickel-and cobalt-based superalloys; joining of polymers and polymer-based composites. Lipold.
Wi Qtr 3 cl. Prereq: 611. Safety related equipment and procedures required.

620 Engineering Analysis for Design and Simulation U G 5
Fundamentals of engineering analysis of heat flow, thermal and residual stresses, and fracture and fatigue with applications to design and simulation in welding and manufacturing. Benatar.
Au Qtr 4 cl, 1-3 hr lab. Prereq: Eng Mech 220. Not open to students with credit for Ind Eng 825. Cross-listed with Ind Sys Eng 825.

621 Welding Engineering Design U G 4
Design fundamentals applicable to welded structures. Hands-on PC-based design laboratory. Tsaie.
Wi Qtr 3 cl, 1-3 hr crpr lab. Prereq: 620 and Eng Mech 440.

631 Nondestructive Evaluation U G 4
Principles of nondestructive evaluation and inspection of materials and structures for engineering plus laboratory experience with principles, equipment, techniques and interpretation of nondestructive tests. Rokhlin.
Au Qtr 3 cl, 1-3 hr lab. Prereq: 3rd yr standing in ENG or equiv with written permission of instructor. Safety related equipment and procedures required.

634 Introduction to Ultrasonics U G 4
Ultrasonic waves in solids and fluids; ultrasonic generators and systems; physical ultrasonics; applications of ultrasonics. Adler.

635 Fundamentals of Radiography U G 4
Intended for engineering students who require knowledge of non-destructive testing methods; basic industrial radiographic methods such as film and real time, radiography, and image analysis are included. Rokhlin.
Sp Qtr 3 cl, 1-hr lab. Prereq: 631 or written permission of instructor.

636 Fundamentals of Optical and Electromagnetic NDE U G 4
An introduction to basic principles of optics and electromagnetic fields and waves will be given with special emphasis on application of these principles to nondestructive evaluation. Wi Qtr 3 cl, 3-hr lab. Prereq: 631 or written permission of instructor.

637 Computer-Aided Design and Testing in NDE U G 3
Principles of computer modeling and design of NDE testing procedures; computer automation and measurements in NDE. Rokhlin.
Sp Qtr 3 cl. Prereq: 631, En Graph 167; or written permission of instructor.

640 Welding Production U G 3
Wi Qtr 3 cl. Prereq: 601; 4th yr standing in ENG or permission of instructor. Not open to students with credit for 642.

641 Welding Codes, Specifications, and Standards U G 3
Consideration of the welding requirements in a variety of industry and government documents including examples from the aircraft, automotive, maritime, piping, and pressure vessel fields. Sp Qtr 3 cl. Prereq: 4th yr standing in ENG or permission of instructor.

651 Welding Process Applications—Laboratory U G 1
Laboratory experience in engineering aspects of welding. Sp Qtr 1 3-hr lab. Concur: 601. GEC course.

655 Welding Process Controls I—Laboratory U G 1
Experimentation with the applications of process controls in welding engineering. Farnon.
Wi Qtr 1 3-hr lab. Concur: 655.

656 Robot Programming and Operations U G 1
Types and applications of industrial robot systems; lab experience in robot operation and programming. Richardson.
Au, Wi, Sp Qtrs. 1 3-hr lab. Prereq: Weld Eng or nd Eng major and written permission of instructor.

657 Advanced Topics in Robotic Programming U G 1
Projects are completed on robotic welding systems; projects provide understanding to evaluate and select robotic welding systems. Au, Wi, Sp Qtrs. 1 cl, 3 lab hrs. Prereq: 656 and permission of instructor.

661 Welding Metallurgy I Laboratory U G 1
Laboratory experience in welding metallurgy. Howden.
Au Qtr 1 3-hr lab. Concur: 611. GEC course.

662 Analysis of Non-Ferrous and High Alloy Welds U G 1
Wi Qtr 1 3-hr lab. Prereq: 610; concur: 612. GEC course.

668 Nondestructive Evaluation Seminar U G 1
Theory and application of nondestructive evaluation as presented in lectures by faculty, staff, graduate students, and guest speakers. Au, Wi, Sp Qtrs. 1 cl. Prereq: 4th yr standing in ENG. Repeatable to a maximum of 6 cr hrs. This course is graded S/U.

690 Capstone Welding Design I U G 1
Group design projects building on all aspects of welding engineering. Lipold.
Au Qtr 1 cl. Prereq: 4th yr standing in weld eng. GEC course.

691 Capstone Welding Design II U G 2
Group design projects building on all aspects of welding engineering. Lipold.
Wi Qtr 2 cl. Prereq: 690. GEC course.

692 Capstone Welding Design III U G 1
Group design projects building on all aspects of welding engineering. Lipold.
Sp Qtrs. 1 cl. Prereq: Permission of instructor. GEC course.

694 Group Studies in Welding Engineering U G 1-15
The student must register for particular topics from fields of welding engineering, the topics, or hrs, and instructor will be announced in quarter previous to the quarter offered.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 15 cr hrs.
701* Solid State Welding U G 3
The welding and joining of metals in the solid state with emphasis on processes and metallurgical principles. Albright.
Sp Qtr. 3 cl. Prereq: 600, Eng Mech 440, Mat Sci & En 542.01.

703 Brazing and Soldering U G 3
Brazing and soldering processes with emphasis on physical and metallurgical principles, materials, design, and application considerations. Howden.
Wi Qtr. 3 cl. Prereq: 504 or permission of instructor.

704 High Energy Density Welding Processes U G 3
Theory and practices in laser, electron beam, plasma, and other high energy density welding processes; process demonstrations. Farson.
Au Qtr. 3 cl. Prereq: 600.

705 Advanced Welding Process Control Systems U G 3
Principles of continuously variable and digital control systems for manual, mechanized, automatic, and feedback operation of arc, resistance, and advanced welding processes. Richardson.
Sp Qtr. 3 cl. Prereq: 605 or permission of instructor.

706 Joining of Plastics and Composites U G 3
Theory and practice in joining of polymers and polymeric composites, including processes and methods for welding, mechanical joining, and adhesive bonding. Benatar.
Au Qtr. 3 cl. Prereq: 620 or equiv.

713 Joining of Specialty Metals U G 3
Theory and practice of joining specialty metals is presented, with emphasis on joining techniques, processes, and procedures and applications. Basilek.
Wi Qtr. 2 1-hr cl, 1 2-hr lab. Prereq: 610

714 Weldability U G 3
Weldability of alloy systems-steels, stainless steels, nickel, aluminum, and titanium alloys—with reference to basic metallurgical phenomena, weldability testing, and interpretation; individual projects and presentations. Howden.
Sp Qtr. 3 cl. Prereq: 611; prerequisite or concord: 612.

715 Special Topics in Welding Engineering U G 3
The course will review the nature of weld defects and their prevention. Other topics include failure analysis and weldability testing. Lippold.
Sp Qtr. Prereq: 610. Student must have basic knowledge of physical metallurgy principles.

723 Analysis of Welding Systems U G 3
Development of an analytical and empirical base for the selection of optimum parameters in the design and fabrication of welded structures. Tsai.
Au Qtr. 3 cl. Prereq: 620.

732 Ultrasonic Nondestructive Evaluation U G 4
Principles of ultrasonic wave interaction with material structures with emphasis on nondestructive measurements of material discontinuities, properties, and non-uniformities. Rokhlin.
Wi Qtr. 3 cl, 1.3-hr lab. Prereq: 631 or permission of instructor, and Math 225 or 256 or 416.

733 Electromagnetic Nondestructive Evaluation U G 4
Fundamentals of electromagnetic fields and waves with emphasis on eddy current NDE methods; electromagnetic generation of ultrasonic waves and optical methods.
Sp Qtr. 3 cl, 1.3-hr lab. Prereq: 631 or permission of instructor, and Math 225 or 256 or 416.

736 Health and Safety U G 3
Major health and safety hazards associated with welding and cutting; radiation, fumes, gases, and noise; discussion of hazard origin, technological control, physiological effects, and regulatory control. Howden.
Wi Qtr. 3 cl. Prereq: 601 or permission of instructor.

740 Fitness-for-Service of Welded Structures U G 3
The interrelationship of design, fabrication, nondestructive evaluation, fracture mechanics, and reliability concepts in establishing the overall fitness-for-purpose of welded structures. Tsai.
Sp Qtr. 3 cl. Prereq: 620 or permission of instructor.

755 Welding Process Control Laboratory U G 1
Laboratory experiments in basic instrumentation and control systems for welding processes such as arc, resistance, electron-beam, and others. Richardson.
Sp Qtr. 1 3-hr lab. Concurre: 705.

H783 Undergraduate Honors Program Research U 1-3
Honors program students are offered the opportunity to pursue independent project/research. Student presentations and thesis writing included. 
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Sr standing in weld eng (or equiv). Students must have a GPA of at least 3.4 and permission of instructor. Repeatable to a maximum of 6 cr hrs.

793 Individual Studies in Welding Engineering U G 1-15
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

795 Graduate Seminar U G 1
Presentations and discussion by graduate students and involved outside speakers on thesis research and current problems in welding engineering. 
Au, Wi, Sp Qtrs. 1 cl. Prereq: Grad or sr standing in weld eng. Repeatable to a maximum of 12 cr hrs. This course is graded S/U.

799 Thesis U 2-15
Undergraduate research providing an opportunity to publish a report in appropriate technical publications. 
Au, Wi, Sp Qtrs. Prereq: 4th yr standing in ENG and permission of instructor. Repeatable to a maximum of 15 cr hrs.

801 Welding Arc Physics U G 3
Theoretical study of the physics of welding arcs including processes of current maintenance and heat dissipation, arc radiation and spectra, arc stability, magnetic fields, and flows. Richardson.
Wi Qtr. 3 cl. Prereq: 600 or permission of instructor.

804 Laser Material Processing Colloquium U G 3
Advanced topics in laser material processing. Colloquium format with student presentations and discussion. Albright.
Sp Qtr. 3 cl.

806* Advanced Welding of Plastics and Composites U G 3
Theoretical study of welding of thermoplastics and composites, including analysis of the basic welding steps and modeling, optimization and control of welding processes. Benatar.
Wi Qtr. 3 cl. Prereq: 706 or permission of instructor.

821 Residual Stresses and Distortion in Weldments U G 3
A study of the formation mechanisms of residual stresses and distortions; mathematical formulations and experimental analysis methods for distortion control. Tsai.
Wi Qtr. 3 cl. Prereq: 723.

835 Advanced NDE Methods U G 4
Modern physical principles as basis for quantitative nondestructive evaluation techniques; includes wave-matter interaction, ultrasound interaction with light, optical, and acoustical holography. Rokhlin.
Au Qtr. 3 cl, 1 3-hr lab. Prereq: 631, 732, and 733, or permission of instructor; and Math 512.

894 Group Studies in Welding Engineering U G 2-5
Special topics in welding engineering; the particular topic, credit hours, and the instructor will be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Prereq: Written permission of instructor. Repeatable to a maximum of 10 cr hrs.

999 Research in Welding Engineering U G 1-3
Research for thesis or dissertation purposes only. 
Su, Au, Wi, Sp Qtrs. This course is graded S/AU.

Women's Studies

286 University Hall, 230 North Oval Mall, 292-1021

201 Introduction to Women's Studies in the Humanities U 5
Examination of the feminist viewpoint through interdisciplinary studies in the humanities; the relationship of feminist concepts, methods, and analyses to traditional, academic disciplines in humanities. 
Su, Au, Wi, Sp Qtrs. 5 or 2.25/hr cl. H201 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 202 or 210. GEC a res and hums cultures and ideas, and social diversity course.

210 Women, Culture, and Society U 5
Interdisciplinary analysis of women, culture, and society; topics include cultural images, socialization, media, sexuality, spatial orientation, work, family, politics, violence, inequality, and racial diversity. 
Su, Au, Wi, Sp Qtrs. 5 or 2.25/hr cl. H210 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 201 or 202. GEC soc sci individuals and groups, and social diversity course.
The Black Woman: Her Role in the Liberation Struggle
See AfrAm&Ast 230.

294 Group Studies U 1-5
Special studies not otherwise offered.
5 cl. Repeatable to a maximum of 15 cr hrs.

H296 Topics in Women's Studies U 5
In-depth study in women's studies focusing on current issues in feminist analysis.
Repeatable to a maximum of 10 cr hrs.

300 Introduction to Feminist Analysis U 5
Introduction to principles of feminist analysis as they apply to a range of contemporary issues and institutions.
Au, Wi, Sp Qtr: 2.2-hr cl. Prereq: One of the following: 201, 202, 210, 215, 367.01, 367.04. Not open to students with credit for 299.

Women in East Asian and Asian-American Literature
See Comp Std 314.

Women and Religion
See Comp Std 315.

317 Women and Film U 5
Representations of women as sex objects, starlets, social activists, and militant feminists in film; cinematic techniques and devices in films about or by women.
2 2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for Comp Std 317. GEC arts and hums VPA course.

325 Issues in Women's Health U 5
An interdisciplinary inquiry into the issues affecting women's health and the politics of gender in the medical care profession.
2 2½-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor.

Introduction to Women's History: The American Experience
See History 325.

326 Women and Addiction: A Feminist Perspective U 5
An interdisciplinary feminist focus on addictive consequences of sex-role socialization, substance abuse, addiction in intimate relationships, and eating disorders; medical/social consequences of addiction among women.
2 2½-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for 301.

Language and Gender
See Linguist 330.

Communication and Gender in Interpersonal and Organizational Settings
See Kommunik 332.

350 Feminist Perspectives on Women and Violence U 5
Use of a feminist, interdisciplinary approach to analyze selected national or international issues of interpersonal and institutionalized violence in which women are victim or perpetrators.
2 2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for this topic under 494.

Communication, Gender, and Society
See Kommunik 362.

Women and Music
See Music 685.

367 Second Writing Course U 5
Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing and social diversity courses.

367.01 U.S. Women Writers: Text and Context
Writing and analysis of U.S. women's experience, with emphasis on interdisciplinary relationships between literature and U.S. women's socio-political history.
Su, Au, Wi, Sp Qtr: 5 cl or 2.2½-hr cl. H367.01 (honors) may be available to students enrolled in an honors program or by permission of dept. Not open to students with credit for 215 or 367 or H367.

367.04 Black Women Writers: Text and Context
Writing and analysis of black women's literary representations of issues in United States social history.
Sp Qtr: 2.2-hr cl. Not open to students with credit for 215 or AFAm&AST 367.04. Cross-listed in African-American and African Studies.

370 Varieties of Female Experience: Lesbian Lives U 5
A survey of cultural, social, and political issues related to historical and contemporary lesbian experience in the United States.
2 2-hr cl. Prereq: 5 cr hrs of wom stds course work or permission of instructor. GEC social diversity course.

372 Modern Arabic Literature in Translation U 5
Reading and analysis of representative works of the 19th and 20th centuries; discussion of development of major movements and genres in modern Arabic literature.
Au, Wi, Sp Qtr: 2.2-hr cl. H372 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: English 110 or 111 or equiv. Not open to students with credit for Arabic 273 or 372. Cross-listed in Arabic. GEC arts and hums lit course.

Women in Ancient Hebrew Literature
Hebrew 374.

Women Artists of the Western World
See Hist Art 400.

424 Women and Work U 5
The social, cultural, and historical factors that influence women's work in the U.S. and the multiple ways work is gendered.
Wi Qtr: 2.2-hr cl. Prereq: 5 cr hrs in wom stds, or permission of instructor; AFAm&AST 101 or 230, History 237, or Sociol 111 recommended.

Sociology of Women
See Sociol 435.

489 Internship in Feminist Theory and Collective Action U 5
Field-based learning experience to explore the relationship between feminist theory and collective action; use of field work and class discussion to relate theory to practice.
Au, Sp Qtr: 1.3-hr cl, minimum of 4 on-site hrs in an organization or agency that serves women. Prereq: 299 or 300, 15 cr hrs in wom stds course work, and permission of instructor. Each hr of cr corresponds to 3 hrs per wk of internship for 10 wks. Students must notify instructor of intent to take internship by beginning of jr yr.

494 Group Studies U 2-5
Special studies not otherwise offered; topic varies; students should consult department current course listing.
Au, Wi, Sp Qtrs: 201 or 210 or permission of instructor. Repeatable to maximum of 15 cr hrs including cr hrs earned in 894.

505 Women's Worlds: Cross-Cultural Analysis U G 5
An interdisciplinary, cross-cultural feminist analysis of women's roles, status, history, and cultural productions in the Third World.
2 2-hr cl. Prereq: 10 cr hrs in wom stds course work or permission of instructor. Not open to students with credit for 597.

Women in Greece and Rome
See Classics 508.

510 American Women's Movements U G 5
An interdisciplinary analysis of the American women's movements, including historical, literary, sociological, and theoretical perspectives.
2 2½-hr cl or 5 cl. H510 (honors) may be available to students enrolled in an honors program or by permission of dept. Prereq: 10 cr hrs of wom stds course work or permission of instructor. Not open to students with credit for 406. GEC social diversity course.

Women, Crime, and the Legal System
See Sociol 510.

Women and Politics
See Polit Sc 512.

Women and the Law
See Polit Sc 514.

520 Women of Color and Social Activism U G 5
Examination of multiple forms of social activism among women of color from various parts of the world concerning local, national, and international issues.
2-2½-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. GEC social diversity course.

Women in the Western World: Ancient Civilization to the Industrial Revolution
See History 523.

Women in the Western World: the Industrial Revolution to the Present
See History 524.

Topics in Women's History
See History 525.
540 Studies in Black Women Writing Culture U G 5
Interdisciplinary feminist study of selected historical and cultural movements through black women’s writing; topics vary by genre and era—civil rights, Harlem Renaissance, abolition.
2 2-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. Repeatable to a maximum of 15 cr hrs.

Psychology of Women
See Psych 543.

550 Introduction to Western Feminist Theory U G 5
An introduction to and analysis of major texts of Western feminist theory as it has developed and changed since the Enlightenment. 5 cr or 2 2½-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. GEC third writing course.

575 Issues in Contemporary Feminist Theory U G 5
Examination of particular contemporary issues which have crucial implications for feminist inquiry (topics vary).
2 2½-hr cl. Prereq: 10 cr hrs of wom stds course work or permission of instructor. Repeatable to a maximum of 10 cr hrs.

Women in Literature
See English 592.

Women, Culture, and Development
See Anthrop 597.02.

Biology of Human Diversity: Race, Gender, and Ethnicity
See Biology 597.

Women’s Sport History
See Edu PAES 610.

620 Topics in Feminist Studies U G 5
Interdisciplinary in-depth analysis of selected topics in feminist research and interpretation; topic varies quarterly.
Su, Au, Wi, Sp Qtrs. 2 2½-hr cl or 5 cl. Prereq: 201 or 210, and at least 10 additional cr hrs in wom stds or written permission of instructor. Repeatable to a maximum of 15 undergrad cr hrs or 15 grad cr hrs. Contact the department for information.

Special Topics in Cultural Anthropology: Anthropology of Women
See Anthropology 620.02.

623 African Women U G 5
A multi-cultural exposure to the varying cultures, situations, and dilemmas in which African women find themselves in the 20th century and to their actions in confronting their problems.
2 2-hr cl. Prereq: Recommended 505 for undergrads.

624 Women and Social Change in Latin America U G 5
Feminist perspectives to introduce students to Latin American women’s experiences and reality as perceived by those who study women and by women themselves.
Au, Wi, Sp Qtrs. 2 2-hr cl. Prereq: 299 or 300 and 5 cr hrs in wom stds at the 300 level or above or related course work; or permission of instructor.

626 Gender and Public Policy U G 5
Examination of public policy from perspectives grounded in feminist political theory, history, legal studies, and cultural studies.
Au Qtr. 2 2-hr cl. Prereq: 299 plus 5 additional wom stds cr hrs at 300 or above; or grad standing.

Women in French Literature
See French 663.

670 Gender Discrimination U G 5
Legal, social, and public policy trends; analysis of gender-related constitutional law and relationship to social, political, and economic developments; meaning and significance of sex discrimination.
Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs of woms stds course work, or permission of instructor. Not open to students with credit for Sociol 670A. Cross-listed in Sociology.

Women in Rural Society
See Rural Soc 678.

693 Individual Studies U G 1-5
Students may register for individual directed study in subjects not covered in regular course work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Jr standing or above; permission of instructor. Repeatable to a maximum of 15 cr hrs. No more than 5 cr hrs may be applied to women’s studies major or minor. This course is graded S/U.

697 Study at a Foreign Institution U G 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

700 Introduction to Graduate Studies G 5
Introduction to women’s studies as an academic field of study and an orientation to the graduate program, facilities, resources, and people.
Au Qtr. 1 3-hr lec, 1 1-hr rec. Prereq: Grad standing in wom stds.

702 Teaching Women’s Studies G 2
Assist graduate students in meeting instructional responsibilities and developing necessary skills for college level teaching in women’s studies.
Au Qtr. 1 2-hr cl. Prereq: Grad standing in wom stds and TA. This course is graded S/U.

710 Theorizing Difference G 5
Examines theories of difference based on race, ethnicity, nationality, sexuality, and class and the ways difference defines and modifies women’s realities.
Wi Qtr. 2 2-hr cl. Prereq: 10 cr hrs of wom stds course work and permission of instructor.

720 Theorizing Gender, Power, and Change G 5
Examination of feminist theoretical approaches to the material conditions of women’s lives and the changing structures of social, economic, and political power.
Wi Qtr. 2 2-hr cl. Prereq: Grad standing in wom stds or permission of instructor.

740 Theorizing Gender Representation G 5
Designed to introduce graduate students to the central debates that have characterized feminist theories of representation of the last two decades.
Sp Qtr. 2 2-hr cl. Prereq: Grad standing in wom stds or permission of instructor.

742 Feminism and the Cinema G 5
Study of the relationship between feminist film theory and criticism and specific genres, historical periods, and issues in cinematic representation.
2 2-hr cl. Prereq: Grad standing in wom stds or permission of instructor.

775 Studies in Feminist Theory G 5
A series of courses which examine the relationships between feminist theories and other significant explanatory systems in the Western cultural tradition.
2-2½-hr cl. Prereq: 5 cr hrs in wom stds at the 500 or 600 level, or permission of instructor. Not open to students with credit for those topics under 500. Repeatable to a maximum of 20 cr hrs in any combination of decimal subdivisions, including cr hrs earned in AfrAm&AS 775.

775.01 Marxism and Feminist Theory
Traces the development of Marxist thought in relation to feminist theory from the 19th century to the present with emphasis on key issues.

775.02 Psychoanalysis and Feminist Theory
An analysis of major psychoanalytic writings about women and feminist responses to them.

775.03 Feminism and Black Political Thought
Theoretical analysis of the politics and perceptions of womanhood in the black community.

775.04 Studies in Women's History
See History 781.

7H83 Honors Research U 3-5
A program of individual study for undergraduate honors students; may include individual conferences and reports; requires presentation and oral defense of an honors thesis.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: 4th yr standing with a CPHR of at least 3.50 in women’s studies courses; permission of thesis adviser and Arts and Sciences Honors Committee. At least 6 cr hrs and 2 qtrs of enrollment are required of candidates for the BA degree with distinction in women’s studies. Repeatable to a maximum of 15 cr hrs. This course is graded S/U.

792 Interdepartmental Studies in the Humanities G 3-5
Two or more departments offer courses on subjects of mutual interest. Repeatable to a maximum of 15 cr hrs.

796 Seminar G 5
796.20 Women and Law
Introduction to basic feminist theories, application of the theories to a series of legal issues involving women researching and writing of an original seminar paper on a topic related to women and law.
5 qtr hr course across Wi and Sp, 2 hrs once a week. Not open to students with credit for Law 796.20. Cross-listed in Law.
Women, Technology, and Education
See Edu-P&L 553.

863 Women's Studies Practicum G 3-5
Internship placement in an agency or organization serving women to provide an opportunity to integrate theoretical and practical knowledge.
Su, Au, Wi, Sp Quatr. Prereq: 700 and at least 10 additional cr hrs of wom stds course work and permission of instructor. Repeatable to a maximum of 10 or cr hrs. Each hr of cr corresponds to 3 hrs per wk of internship for 10 wks. This course is graded S/U.

Black Role Models: Racism and Sexism
See AIAM&ASI 805.

880 Research Seminar G 3
The first quarter of a two-quarter seminar in which students will research and write an original scholarly paper and critique the work of other students.
Au Qtr. 1-3 hr cr. Prereq: Permission of instructor. This course is progress (P) graded. Credit given upon completion of 881.

881 Research Seminar G 3
The second quarter of a two-quarter seminar in which students will research and write an original scholarly paper and critique the work of other students.
Wi Qtr. 1-3 hr cr. Prereq: 880.

Seminar in Women's History
See History 881.

890 Interdepartmental Studies in Critical Theory G 5
Interdisciplinary study of a movement (phenomenology, deconstruction, etc.) or problem (intentionality, evaluation, etc.) in library theory.
Sp Qtr. 2-5 or 6 cr. Prereq: Background in critical theory recommended. Repeatable to a maximum of 10 or cr hrs. Cross-listed in Comparative Studies in the Humanities, English, French, German, and Spanish.

998 Research in Women's Studies: Thesis G 1-15
Directed research for master's thesis.
Su, Au, Wi, Sp Qtr. Arr. Prereq: Progress toward the degree. Repeatable to a maximum of 15 or cr hrs. This course is graded S/U.

Yiddish
314 Cunz Hall, 1841 Millikin Road, 292-6966

101 Elementary Yiddish I U 5
Introduction to Yiddish; development of listening, reading, speaking and writing skills.
Au, Sp Qtr. 5 cr. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more years of study in this language in high school, except by permission of dept. This course is available for EM credit. GEC for lang course. FL. Adms Cond course.

102 Elementary Yiddish II U 5
Continuation of 101; further development of listening, reading, speaking and writing skills.
Au, Wi Qtrs. 5 cr. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course. FL. Adms Cond course.

103 Intermediate Yiddish I U 5
Continued study of Yiddish; development of listening, reading, speaking and writing skills; reading of simplified literary texts about Yiddish culture.
Wi, Sp Qtr. 5 cr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

104 Intermediate Yiddish II U 5
Readings of Yiddish short stories and poems with attention to literary and cultural appreciation; development of basic language skills.
Au, Sp Qtr. 5 cr. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. This course is available for EM credit. GEC for lang course.

241 Yiddish Culture U 5
Introductory survey of political, social, ideological, and religious trends as reflected in Yiddish culture, especially folklore and literature.
Au Qtr. 5 cr. Not open to students with credit for 341. GEC arts and hums cultures and idea course.

293 Individual Studies U 1-5
Su, Au, Wi, Sp Qtr. Arr. Prereq: Written permission of instructor. Repeatable to a maximum of 15 or cr hrs. This course is graded S/U.

294 Group Studies U 1-5
Special topics announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtr. Prereq: Permission of instructor. Repeatable to a maximum of 15 or cr hrs.

367 Jewish-American Voices in U. S. Literature U 5
Introduction to Jewish-American literature; development of expository writing and argumentation skills through systematic and critical reflection upon their own country from the perspective of an ethnic community.
Au Qtr. 2-2 hr cr. Prereq: English 110 or 111 or equiv, and soph standing. GEC second writing course.

371 Yiddish Literature in Translation U 5
Reading, analysis, and discussion of representative works and of the development of major movements and genres in Yiddish literature.
Wi Qtr. 5 cr. Taught in English. GEC arts and hums lit course.

401 Advanced Yiddish I U 5
Reading in literary and journalistic prose, with practice in conversation and composition; intensive review of Yiddish grammar.
Wi Qtr. 5 cr. Prereq: 104 or equiv. Not open to students with credit for 294. Wi 1983 or Wi 1984.

402 Advanced Yiddish II U 5
Readings in texts from the nineteenth century to the present with emphasis on contemporary prose; practice in conversations and composition.
Sp Qtr. 5 cr. Prereq: 401 or equiv. Not open to students with credit for 294. Sp 1984.

403* Advanced Yiddish Conversation and Composition U 5
Intensive practice in speaking and writing Yiddish, based on contemporary Yiddish literary usage; conducted entirely in Yiddish.
Au Qtr. 5 cr. Prereq: 402 or permission of instructor.

611 History of the Yiddish Language U 5
Linguistic history of Yiddish; Yiddish dialect formation; analysis of Yiddish documents from the 13th century to the present; Yiddish in the context of Jewish interlinguistics.
Au Qtr. 5 cr. Prereq: 402 or equiv or permission of Instructor.

612 Yiddish Linguistic Geography U 5
Development and description of Yiddish dialect areas; linguistic atlases and the mapping of Yiddish dialect features, dialect networks; development of standard Yiddish.
Au, Wi Qtrs. 2-2 hr cr. Prereq: 402 or permission of instructor.

641 Language and Society in Interwar Vienna U 5
Interwar Viennese social and political structure; language and literary expression; ethnolinguistic diversity; arts and architecture; gender politics; transition of empire to republic; roots of Austro-fascism; anti-Semitism.
Wi, Sp Qtrs. 2-2 hr cr. Prereq: Joint standing or permission of instructor. Not open to students with credit for German 641. Cross-listed in German.

651 Modern Yiddish Prose U 5
Reading and analysis of short stories and novels representative of major developments and trends in Yiddish prose of the 19th and 20th centuries.
Au Qtr. 5 cr. Prereq: 402 or equiv.

693 Individual Studies U 1-5
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of instructor. Maximum of 15 or cr hrs. This course is graded S/U.

694 Group Studies U 1-5
Special topics to be announced in the quarter previous to the one in which the course is offered.
Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 15 or cr hrs.

697 Study at a Foreign Institution U 1-15
An opportunity for students to study at a foreign institution and receive Ohio State credit for that work.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Written permission of dept chairperson. Repeatable to a maximum of 45 or cr hrs. Students will pay Ohio State fees and any fees in excess of Ohio State tuition, as well as all travel and subsistence costs.

721 Studies in Yiddish Literature U 5
Advanced study of specific literary periods, figures, and/or topics involving extensive reading and discussion of appropriate primary and secondary source materials.
Wi Qtr. 5 cr. Prereq: 5 cr hrs of Yiddish at the 600 level. Repeatable to a maximum of 15 cr hrs.
H783 Honors Research U 3-5
A program of research for each student which includes individual conferences and which culminates in an honors thesis or oral defense.
Su, Au, Wi, Sp Qtrs. Arr. Prereq: Approved candidacy for graduation with distinction, which includes faculty adviser and ASC Honors Committee approval of project; a minimum 3.50 pt/hr ratio in the field of distinction, or standing, and 3.00 GPA in the commensurate with honors program membership. Repeatable to a maximum of 15 cr hrs. This course is graded Su/U.

511 Seminar in Yiddish Studies G 5
In-depth study of a selected topic or issue in Yiddish literature, linguistics, or intellectual culture.
Sp Qtr. 3-5 cr. Prereq: Permission of instructor. Repeatable to a maximum of 15 cr hrs.

598 Research in Yiddish G 1-10
Research for thesis purposes only.
Su, Au, Wi, Sp Qtrs. Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs.

Yoruba

486 University Hall, 230 North Oval Mall, 292-3700

101 Elementary Yoruba I U 5
Introduction to elementary Yoruba with emphasis on oral proficiency.
5 cr. Not open to native speakers of this language through regular course enrollment or EM credit or to students with 3 or more yrs of study in this language in high school. GEC for lang course. FL Admis Cond course.

102 Elementary Yoruba II U 5
Continuation of 101 with emphasis on oral proficiency.
5 cr. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Yoruba I U 5
Intermediate Yoruba, combining oral and reading skills.
5 cr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

104 Intermediate Yoruba II U 5
Continuation of 103, combining oral and reading skills.
5 cr. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

Zoology

See Evolution, Ecology, and Organismal Biology.

Zulu

486 University Hall, 230 North Oval Mall, 292-3700

101 Elementary Zulu I U 5
Introduction to elementary Zulu, using a proficiency-based approach.
Au Qtr. 5 cr. Not open to native speakers of this language through regular course enrollment or EM credit, or to students with 3 or more yrs of study in this language in high school, except by permission of dept. GEC for lang course. FL Admis Cond course.

102 Elementary Zulu II U 5
Continuation of 101, using a proficiency-based approach.
Wi Qtr. 5 cr. Prereq: 101. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course. FL Admis Cond course.

103 Intermediate Zulu I U 5
Introduction to intermediate Zulu, using a proficiency-based approach.
Sp Qtr. 5 cr. Prereq: 102. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.

104 Intermediate Zulu II U 5
Continuation of 103, using a proficiency-based approach.
Sp Qtr. 5 cr. Prereq: 103. Not open to native speakers of this language through regular course enrollment or EM credit. GEC for lang course.
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