Academic Calendar 1985/87

The material in this catalog has been prepared for information purposes and does not constitute a contract between the student and the university. The university reserves the right to make changes in policy, regulations, fees, academic calendar, and programs without notice.

In order to make current academic information available to students, new course descriptions and changes in academic policies and programs that have been made since the publication of this bulletin will be printed in the quarterly class schedules.

The course descriptions included in this catalog represent the entire range of undergraduate courses offered at Wright State (for graduate courses, see the Graduate Catalog). However, not all courses are available every quarter or every year. For a listing of the specific courses offered in a particular quarter, students should consult the quarterly class schedule.

Questions concerning admission to the university or questions about academic programs should be directed to the Office of Admissions, Wright State University, Dayton, Ohio 45435, telephone 513/873-2211.

This catalog was prepared by the Office of University Communications, Wright State University, Dayton, Ohio.

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**Fall Quarter  September 16-December 7, 1985**

- September 18, Wednesday/classes begin
- November 11, Monday/Veterans Day holiday
- November 27, Wednesday/classes end
- November 28-December 1, Thursday-Sunday/Thanksgiving holiday
- December 2-7, Monday-Saturday/final examinations
- December 7, Saturday/December Commencement

**Winter Quarter  January 6-March 22, 1986**

- January 6, Monday/classes begin
- January 17, Friday/Martin Luther King holiday
- March 15, Saturday/classes end
- March 17-22, Monday-Saturday/final examinations

**Spring Quarter  March 31-June 14, 1986**

- March 31, Monday/classes begin
- May 26, Monday/Memorial Day holiday
- June 7, Saturday/classes end
- June 9-14, Monday-Saturday/final examinations
- June 14, Saturday/June Commencement

**Summer Quarter  June 16-August 21, 1986**

- June 16, Monday/Terms A and C classes begin
- July 4, Friday/Independence Day holiday
- July 17, Thursday/Term A classes end
- July 21, Monday/Term B classes begin
- August 21, Thursday/Terms B and C classes end
<table>
<thead>
<tr>
<th>Quarter</th>
<th>Start-End Date</th>
<th>Events</th>
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<tbody>
<tr>
<td>Fall Quarter</td>
<td>September 17-December 6</td>
<td>September 17, Wednesday/classes begin</td>
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<td>November 11, Tuesday/Veterans Day holiday</td>
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<td>December 1-6, Monday-Saturday/final examinations</td>
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<td>December 6, Saturday/December Commencement</td>
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<tr>
<td>Winter Quarter</td>
<td>January 5-March 21, 1987</td>
<td>January 5, Monday/classes begin</td>
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<td>January 16, Friday/Martin Luther King holiday</td>
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<td>March 16-21, Monday-Saturday/final examinations</td>
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<tr>
<td>Spring Quarter</td>
<td>March 30-June 13, 1987</td>
<td>March 30, Monday/classes begin</td>
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<td>May 25, Monday/Memorial Day holiday</td>
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<td>June 6, Saturday/classes end</td>
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<td>June 8-13, Monday-Saturday/final examinations</td>
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<td>June 13, Saturday/June Commencement</td>
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<tr>
<td>Summer Quarter</td>
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<td>July 3, Friday/Independence Day holiday</td>
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<td>July 16, Thursday/Term A classes end</td>
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<td>July 20, Monday/Term B classes begin</td>
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<td></td>
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<td>August 20, Thursday/Terms B and C classes end</td>
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## Course Abbreviations

Specific courses in curriculum outlines and lists of degree requirements are indicated by the following abbreviations for the areas of study:

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<tr>
<th>Abbreviation</th>
<th>Subject Area</th>
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<tbody>
<tr>
<td>MIL</td>
<td>Military Science</td>
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<td>ML</td>
<td>Modern Language Humanities</td>
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<td>TH</td>
<td>Motion Pictures</td>
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<td>MUS</td>
<td>Music</td>
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<td>NUR</td>
<td>Nursing</td>
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<td>OA</td>
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<td>PHL</td>
<td>Philosophy</td>
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<td>Physiology</td>
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<td>Political Science</td>
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<td>POR</td>
<td>Portuguese</td>
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<td>PSY</td>
<td>Psychology</td>
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<td>QBA</td>
<td>Quantitative Business Analysis</td>
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<td>RHB</td>
<td>Rehabilitation</td>
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<td>REL</td>
<td>Religion</td>
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<td>RUS</td>
<td>Russian</td>
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<td>Study Skills</td>
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<td>TH</td>
<td>Theatre</td>
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<tr>
<td>UD</td>
<td>University Division</td>
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<td>UH</td>
<td>University Honors</td>
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<td>URS</td>
<td>Urban Affairs</td>
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<td>BCH</td>
<td>Biological Chemistry</td>
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<td>BIO</td>
<td>Biological Sciences</td>
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<td>CHM</td>
<td>Chemistry</td>
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<td>COM</td>
<td>Communication</td>
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<td>CPL</td>
<td>Comparative Literature</td>
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<td>CEG</td>
<td>Computer Engineering</td>
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<tr>
<td>CS</td>
<td>Computer Science</td>
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<td>Counseling</td>
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<td>Dance</td>
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<tr>
<td>DN</td>
<td>Danish</td>
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<tr>
<td>EC</td>
<td>Economics</td>
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<td>ED</td>
<td>Education</td>
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<td>EGR</td>
<td>Engineering</td>
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<td>English</td>
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<td>ENV</td>
<td>Environmental Studies</td>
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<td>FIN</td>
<td>Finance</td>
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<td>FR</td>
<td>French</td>
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<td>GS</td>
<td>General Studies</td>
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<td>GEO</td>
<td>Geography</td>
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<td>GL</td>
<td>Geological Sciences</td>
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<td>German</td>
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<tr>
<td>GR</td>
<td>Greek</td>
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<tr>
<td>HPR</td>
<td>Health, Physical Education, and Recreation</td>
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<td>HST</td>
<td>History</td>
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<tr>
<td>ITA</td>
<td>Italian</td>
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<td>JPN</td>
<td>Japanese</td>
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<td>LAT</td>
<td>Latin</td>
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<td>LE</td>
<td>Law Enforcement</td>
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<tr>
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<td>Liberal Arts</td>
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<tr>
<td>LCS</td>
<td>Library and Communication Science</td>
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<tr>
<td>LI</td>
<td>Linguistics</td>
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<td>MGT</td>
<td>Management</td>
</tr>
<tr>
<td>MKT</td>
<td>Marketing</td>
</tr>
<tr>
<td>MTH</td>
<td>Mathematics</td>
</tr>
<tr>
<td>MT</td>
<td>Medical Technology</td>
</tr>
<tr>
<td>M&amp;I</td>
<td>Microbiology and Immunology</td>
</tr>
</tbody>
</table>

## Technical Course Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Subject Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEG</td>
<td>Engineering Technology</td>
</tr>
<tr>
<td>TAC</td>
<td>Technical Accountancy</td>
</tr>
<tr>
<td>TAD</td>
<td>Technical Administration</td>
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<tr>
<td>TAI</td>
<td>Technical Administrative Information Systems</td>
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<tr>
<td>TAU</td>
<td>Technical Automotive</td>
</tr>
<tr>
<td>TDP</td>
<td>Technical Data Processing</td>
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<tr>
<td>TEN</td>
<td>Technical English</td>
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<td>TFI</td>
<td>Technical Finance</td>
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<tr>
<td>TMG</td>
<td>Technical Management</td>
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<td>TMK</td>
<td>Technical Marketing</td>
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<tr>
<td>TMT</td>
<td>Technical Mathematics</td>
</tr>
<tr>
<td>TOA</td>
<td>Technical Office Administration</td>
</tr>
<tr>
<td>TPH</td>
<td>Technical Physics</td>
</tr>
<tr>
<td>TPS</td>
<td>Technical Psychology</td>
</tr>
<tr>
<td>TQB</td>
<td>Technical Quantitative Business Analysis</td>
</tr>
<tr>
<td>TSO</td>
<td>Technical Sociology</td>
</tr>
<tr>
<td>TSS</td>
<td>Technical Study Skills</td>
</tr>
<tr>
<td>TWW</td>
<td>Water Well Technology</td>
</tr>
</tbody>
</table>
Course Numbering System

0-99 Remedial precollege-level courses.
100-499 Lower division courses intended for undergraduate credit only. The first digit indicates the general level of the course: 1 for a first-year course, 2 for a second-year course, 3 for a third-year course, 4 for a fourth-year course. Courses in this category that are acceptable for graduate credit carry alternate numbers in which the first digit only is changed to a 5 or a 6 according to the definitions below.

500-599 Courses that carry graduate credit only in a major field different from that of the department offering the course. Most such courses will be alternate designations of courses normally numbered 300-499.

600-699 Courses that carry graduate credit in any major field and have alternate designations in which the first digit is a 3 or 4 when taken for undergraduate credit.

700-999 Courses intended for graduate credit only. Unclassified students may, with the approval of the department offering the course, register for undergraduate credit in courses numbered 700-799.

The number following the hyphen indicates the number of credit hours for that course. Courses designated by consecutive numbers are related courses; courses to be taken in sequence are so designated in the descriptions.
Wright State University
Past and Present

Wright State University is a fully accredited state-assisted university, offering to a student population of nearly 16,000 more than a hundred undergraduate majors, twenty-seven master's degree programs, and programs of study for the M.D., Psy.D., Ed.S., and Ph.D. degrees, as well as certification programs. We've reached this state in our growth just twenty-one years after opening our doors in 1964 as the Dayton Campus of the Miami and The Ohio State Universities. These schools had been offering classes in borrowed facilities in our area for many years, giving rise in the 1950s to the idea of a joint branch campus. A community fund-raising effort in 1961 generated three million dollars, which financed the purchase of our 639-acre campus near Dayton, Ohio, and the construction of Allyn Hall, our first building.

In 1965, we became Ohio's twelfth state-assisted university, known as the Wright State Campus. A major turning point was reached in October 1967, when we became an independent state institution. Wright State University was then recognized as fully accredited and autonomous. In a few short years, we had grown from a faculty of fifty-five and a student population of 3,200 to a university with 5,000 students registered in ninety-six different programs and concentrations, master's degree programs in five disciplines, and 206 faculty members. Three new buildings had been constructed, completing Founders Quadrangle in the center of campus.

Since that time, our history has continued to be characterized by growth and change. The residence hall opened in 1970, followed by the completion of the University Center and the president's house in 1971. In 1973, we celebrated the openings of the Creative Arts Center, the University Library, the Physical Education Building, and the Brehm Laboratory. Facilities for the biological sciences were completed in 1975 and 1976, and the Medical Sciences Building was dedicated in 1976. New offices, bringing together student services in one central location, were completed in 1977.

The creation of the Wright State University School of Medicine in 1974 marked our first professional doctorate and indicated our commitment to providing resources for primary health care. The first class of medical doctors graduated in 1980.

In 1977, we received authorization to establish a School of Professional Psychology, and planning approval was granted for a Ph.D. program in biomedical sciences. Both programs admitted their first students in 1979. The School of Engineering, operating within the College of Science and Engineering, was approved by the Board of Trustees in 1984.

In 1981, construction was completed on Rike Hall, housing the College of Business and Administration, and the Frederick A. White Center, which is both a teaching facility and a center for health care services. Our newest buildings are the Health Sciences Building, which houses the School of Professional Psychology and animal laboratories, and the Engineering and Mathematical Sciences Building. Construction is planned within the Miami Valley Research Park for the National Center for Rehabilitation Engineering.

Since our beginning in 1964, we have continually expanded and responded to community needs. We have grown from a branch campus to a fully independent, comprehensive university with programs of study leading to baccalaureate, graduate, and professional degrees. Through the Colleges of Business and Administration, Education and Human Services, Continuing and Community Education, Liberal Arts, and Science and Engineering; the Schools of Graduate Studies, Engineering, Medicine, Nursing, and Professional Psychology; and our branch campus, we offer a fully balanced university program, committed to excellence and community service.

People

Our students don't fall easily into any one category. To give you a general idea about them, we rely on studies and statistics gathered from different areas of the university.

The majority of our students are undergraduates—more than 12,000, most of whom come from southwestern Ohio. We also have students from other parts of Ohio, from almost every other state in the nation, and from approximately thirty-five nations outside the United States.

Most of our students are commuters. About ninety-six percent regularly travel to campus for their classes. Many of our full-time undergraduate students live at home; others live in off-campus rooms and apartments. University housing accommodates approximately 600 students—160 men and 160 women in separate wings in Hamilton Hall and 288 in two- and four-person furnished apartments next to the campus.

Some of our students are slightly older than those at most other campuses. About a fourth are under twenty-one and twenty-seven percent are over thirty; the median age is twenty-six. A 1984 study indicated that fifty percent of our students are male and seventy percent of our students are single.

A number of students with disabilities have chosen us because of our excellent facilities and support services. About two percent of our student population are people with a disability.

Academically, we find that Wright State students represent the entire spectrum of the scale, according to national ACT results. The ACT profile also indicates that the average of high school grades for our freshmen is 3.01 on a 4.0 scale, with twenty-three percent of them falling between 3.5 and 4.0.
For students who want it, the opportunities are good for close contact with faculty. The size of classes at Wright State varies from large lecture sessions to small classes and seminars. About seventy percent of our classes have enrollments between five and forty.

About eighty percent of our full-time faculty hold terminal degrees in their fields and many also bring valuable professional experience to the classroom. In addition to their teaching responsibilities, many faculty members conduct active research programs. The faculty includes about 626 full-time and about 250 part-time members.

As a state-assisted university, we have an open enrollment policy for undergraduate students, which means we accept Ohio residents who have graduated from an accredited high school, or who have passed a high school equivalency test, at the earliest possible time we can accommodate the applicant.

**Purpose**

Our purpose is to maintain a free and cosmopolitan environment in which people may work to achieve excellence in teaching, make substantial contributions to human knowledge, and contribute major service to humanity. We're committed to providing career and professional education for our students as well as study outside the chosen area of specialization. We view education as a lifelong learning process, so in addition to traditional degree programs, we provide adult education through a variety of nontraditional programs. To enhance learning, we feel it's important for the teacher and the student to exchange ideas freely. We expect our faculty to experiment with innovative teaching techniques.

We want our faculty and students to remain open-minded and to explore new directions which may contribute to human knowledge. We encourage basic research in the arts and humanities, as well as in the sciences and technical fields.

As a public institution of higher education, we make every effort to serve the larger community by being particularly responsive to the needs of the Miami Valley region and the state of Ohio.

We seek to create an environment in which each person has academic freedom—the opportunity to learn the truth about any subject as long as it doesn't interfere with others' rights.

Because we value diversity in viewpoints, we actively seek faculty and students of different backgrounds. The policy of Wright State University is to not discriminate against any person on the basis of race, religion, color, sex, sexual preference, disability, veteran status, national origin, age, or ancestry. In addition, we take affirmative action to recruit and assist members of various racial or ethnic groups, women, Vietnam-era veterans, and persons with disabilities whose ability to achieve
academic success might otherwise be unrecognized because of cultural barriers. Our policy is fully consistent with the various federal and Ohio statutes that prohibit discrimination.

Any questions or comments about the university’s policy, and any complaint about perceived discrimination, may be directed to Juanita Wehrle-Einhorn, director of Affirmative Action Programs, 224 Millett Hall, telephone 513-873-3207. The university’s Affirmative Action Plan is maintained in the Office of Affirmative Action Programs. We are a public institution, and any member of the public may request a copy of the plan.

In addition, Wright State University is a national leader in accommodating the needs of students with disabilities. Any questions or comments concerning a needed accommodation may be directed to Stephen H. Simon, director of Handicapped Student Services, 133 Student Services, telephone 513/873-2141.

Degrees and Areas of Study

Wright State grants these baccalaureate degrees: Bachelor of Arts (B.A.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.Mus.), Bachelor of Science (B.S.), Bachelor of Science in Business (B.S.B.), Bachelor of Science in Computer Engineering (B.S.C.E.), Bachelor of Science in Education (B.S.Ed.), Bachelor of Science in Engineering (B.S.E.), Bachelor of Science in Medical Technology (B.S.M.T.), and Bachelor of Science in Nursing (B.S.N.).

The following associate degrees, available only at the Western Ohio Branch Campus, are also granted: Associate of Arts (A.A.), Associate of Science (A.S.), Associate of Applied Business (A.A.B.), and Associate of Applied Science (A.A.S.).

The fields of study in which Wright State offers course work leading to a baccalaureate degree follow.

College of Education and Human Services

Art Education (B.S.Ed.)
Biological Sciences Education (B.S.Ed.)
Business Education Comprehensive with Shorthand (B.S.Ed.)
Business Education Comprehensive without Shorthand (B.S.Ed.)
Chemistry Education (B.S.Ed.)
Earth Science Education (B.S.Ed.)
Educational Media K-12 (Library Science Education) (B.S.Ed.)
Elementary Education (B.S.Ed.)
English Education (B.S.Ed.)
History Education (B.S.Ed.)
Mathematics Education (B.S.Ed.)
Modern Languages Education (B.S.Ed.)
Physical Education K-12 (B.S.Ed.)
Physics Education (B.S.Ed.)
Rehabilitation Education (B.S.)
Science Comprehensive Education (B.S.Ed.)
Social Studies Comprehensive Education (B.S.Ed.)
Special Education (Developmentally Handicapped: Moderately, Severely, and Profoundly Retarded; Specific Learning Disabilities) (B.S.Ed.)
Speech and Theatre Education (B.S.Ed.)

Second Teaching Fields Only

Economics Education
General Science Education
Geography Education
Latin Education
Political Science Education
Sociology Education

College of Liberal Arts

Acting (B.F.A.)
Anthropology (B.A.)
Applied Music (B.Mus.)
Art (B.A., B.F.A.)
Art History (B.A.)
Classical Humanities (B.A.)
Communication (B.A.)
Dance (B.F.A.)
Directing/Stage Management (B.F.A.)
Economics (B.A.)
English (B.A.)
French (B.A.)
Geography (B.A., B.S.)
German (B.A.)
Greek (B.A.)
History (B.A.)
Latin (B.A.)
Modern Languages (B.A.)
Motion Picture History, Theory, and Criticism (B.A.)
Motion Picture Production (B.F.A.)
Music (B.A.)
Music Composition (B.Mus.)
Music Education (B.Mus.)
Music History and Literature (B.Mus.)
Music Theory (B.Mus.)
Philosophy (B.A.)
Political Science (B.A.)
Religion (B.A.)
Selected Studies (B.A., B.F.A.)
Social and Industrial Communication (B.A.)*
Social Work (B.A.)
Sociology (B.A.)
Spanish (B.A.)
Theatre Arts Management (B.F.A.)
Theatre Design/Technology (B.F.A.)
Theatre Studies (B.A.)
Urban Affairs (B.A., B.S.)
*Dual major

College of Science and Engineering/School of Engineering
Biological Sciences (B.S., B.A.)
Biomedical Engineering (B.S.E.)
Chemistry (B.S., B.A.)
Computer Engineering (B.S.C.E.)
Computer Science (B.S., B.A.)
Electrical Systems Engineering (B.S.E.)
Engineering Physics (B.S.E.)
Environmental Health (B.S.)
Geological Sciences (B.S., B.A.)
Geophysics (B.S.)
Groundwater Technology (B.A.)
Human Factors Engineering (B.S.E.)
Materials Science and Engineering (B.S.E.)
Mathematics (B.S., B.A.)
Mechanical Systems Engineering (B.S.E.)
Medical Technology (B.S.M.T.)
Physics (B.S.)
Psychology (B.S., B.A.)

Wright State University-Miami Valley School of Nursing
Nursing (B.S.N.)

Academic Organization and Programs
We offer undergraduate programs in the Colleges of Business and Administration, Education and Human Services, Liberal Arts, and Science and Engineering; the Schools of Engineering and Nursing; and through the Western Ohio Branch Campus. Graduate programs are offered through the School of Graduate Studies; the Schools of Medicine and Professional Psychology and the College of Science and Engineering offer professional and postbaccalaureate programs.

Noncredit courses are available through the College of Continuing and Community Education, and some credit courses are offered at Wright State University Extension.

The College of Business and Administration
Bachelor of Science in Business degree programs are offered with majors in accountancy, business economics, finance, financial services, management, management science, and marketing. Programs may include internships and co-op opportunities.

The College of Education and Human Services
Basically a professional school, the college is devoted to preparing entry-level teachers, educational administrators, and other school leaders, and to preparing professionals in human services such as counseling, rehabilitation, and art therapy. The college awards the Bachelor of Science in Education and Bachelor of Science degrees.

The College of Liberal Arts
The college offers programs in the fine arts, social sciences, and the humanities which lead to the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, and Bachelor of Science degrees. Many different career orientations are available through liberal arts studies. In addition, departments within the college offer specific courses which meet the university’s General Education requirements. These general studies allow students to view a wide variety of subjects at an introductory level before they choose and prepare for their careers.
The College of Science and Engineering/School of Engineering

Primarily discipline oriented, the college and school offer programs leading to the Bachelor of Science, Bachelor of Science in Medical Technology, Bachelor of Science in Engineering, Bachelor of Science in Computer Engineering, and Bachelor of Arts degrees as well as interdisciplinary programs in computer engineering and engineering physics. General Education courses in the sciences are offered by various departments.

The School of Nursing

Geared toward meeting community needs, the School of Nursing offers a nursing program designed to give students the knowledge and skills to deal with the health care needs of people. The program leads to the Bachelor of Science in Nursing degree which qualifies the graduate for the State Board Test Pool examination required for state licensure as an R.N. A Master of Science degree in nursing is also offered in cooperation with Miami University.

The School of Graduate Studies

The graduate school is responsible for twenty-seven master’s degree programs, a post-master’s degree (Educational Specialist), and the Doctor of Philosophy degree in biomedical sciences, as well as courses for certification programs in education, Teaching English to Speakers of Other Languages (TESOL), cartography, photogrammetry, and remote sensing; and archival and historical administration. Degrees may be earned in the following fields of graduate study.

Master’s Degree Programs

Master of Arts
Applied behavioral science, classroom teacher, counseling, educational leadership, English, history, personnel counseling, selected graduate studies, student personnel services

Master of Art Therapy

Master of Business Administration
Accountancy, finance, financial administration, logistics management, management, management science, marketing

Master of Education
Classroom teacher, educational leadership, student personnel services

Master of Humanities

Master of Music
Music education

Master of Rehabilitation Counseling

Master of Science
Aerospace medicine, biology, chemistry, computer science, counseling, geological sciences, logistics management, mathematics, nursing, personnel counseling, physics, selected graduate studies, social and applied economics, systems engineering

Master of Science in Computer Engineering

Master of Science in Teaching
Earth science, physics

Post-Master’s Degree Program

Educational Specialist

Doctoral Degree Program

Doctor of Philosophy
Biomedical sciences

The School of Medicine

The medical school’s goal is to provide professional education for future primary care physicians. Graduates of this four-year doctoral program receive the Doctor of Medicine (M.D.) degree.

The School of Professional Psychology

The school offers a doctoral program which prepares men and women for work as professional psychologists. The program requires approximately four years of study and grants the Doctor of Psychology (Psy.D.) degree.

The College of Continuing and Community Education

A wide variety of noncredit courses is offered at the Wright State University Kettering Center in downtown Dayton, on the main campus, and at several off-campus locations. These courses are designed to meet the needs of different groups of people such as professionals, homemakers, the
elderly, and others interested in lifelong learning. Noncredit courses may be taken without going through the university’s formal admissions process.

Through its Saturday Enrichment programs, the college provides an opportunity for children in kindergarten through eighth grade to explore and develop their special talents and interests. The Community Music Division of the Department of Music offers noncredit classes for Wright State students and Dayton area residents.

The college also cooperates with other academic colleges and departments on the main campus to offer special credit courses and workshops. The college has administrative responsibility for the Wright State University Extension.

The Western Ohio Branch Campus
Located at Grand Lake St. Marys between Celina and St. Marys, Wright State’s branch campus serves Van Wert, Mercer, Auglaize, and Darke counties. Its day and evening classes are mostly lower division with a limited number of upper-division and graduate courses available. There are also programs leading to two-year associate degrees. The prebaccalaureate Associate of Arts and Associate of Science degrees, as well as a variety of two-year Associate of Applied Business and Associate of Applied Science degree programs, are offered.

In addition, an associate degree in law enforcement technology is offered through a cooperative program with Lima Technical College.

Wright State University Extension
Late afternoon and evening classes at the advanced and graduate levels are offered by Wright State University Extension at Edison State Community College for the convenience of upper Miami Valley residents.

Alternative Academic Programs
In addition to conventional degree programs and classroom experiences, we also offer some innovative alternatives for undergraduate study.

Most of our departments offer independent study, and off-campus education is prevalent in professional programs. In the College of Education and Human Services, off-campus participation ranges from observing to student teaching, and in the College of Business and Administration, internships and class projects bring students in contact with local business and industrial firms. Students in nursing, social work, and other areas have direct contact with many outside agencies.

The university accepts the recommendation made by the American Council on Education in “The 1980 Guide to the Evaluation of Educational Experiences in the Armed Services” for transfer credit earned by attending military school.

You can obtain credit by examination, which makes it possible for you to get college credit for courses available at the university by passing an examination offered by the appropriate department. You must be registered and have completed at least one course at Wright State in order to receive credit by examination.

Many specific programs provide different ways to approach your college education.

Cooperative Education
Cooperative education programs, available through various departments, offer you the opportunity to alternate on-campus study with full-time or part-time educationally related work experience. Cooperative jobs are found by the university and job placements are monitored by the Cooperative Education staff and/or faculty. Academic credit for work experience may be earned in some departments. In other departments, students are required to register for Cooperative Education courses.

Through the co-op program, students can gain valuable learning experiences, test career interests, learn more about career fields, and develop job-related skills, as well as earn income for college expenses.

Co-op students participate in a university-sponsored educational program. During the work portion of their co-op program, registered co-op students are considered full-time students at Wright State.

Students interested in the optional co-op program are advised to make plans as early in their academic careers as possible. The Cooperative Education staff is available to help students apply to the program and to offer suggestions about planning and scheduling.

Study Abroad
Wright State students may participate in exchange programs with Japan and Brazil. Each summer the university engages in an exchange program with the Okayama University of Science in Okayama, Japan. Okayama University of Science students have visited Wright State each summer since 1980. A second cultural exchange program began in the summer of 1984 when Wright State hosted students from the Federal University of Paraná, in Curitiba, Brazil, and Wright State students visited Curitiba. The Federal University of Paraná program follows the pattern set by the Okayama exchange, which provides an excellent opportunity to learn about the host country’s culture through classroom experiences, side trips, and a stay with a host family. For further information about the international student exchange programs with Japan and Brazil, contact the Office of Student Development.
Other study abroad programs are sponsored from time to time by academic departments. Information may be obtained by contacting individual departments and by watching for promotional materials. The University Library has a number of catalogs available from universities around the world.

**Interdisciplinary Study**

Interdisciplinary study provides the opportunity to explore different areas or to tailor a major to your interests. Many courses are offered jointly by cooperating departments. You can also combine work in two different departments for a dual major. The selected studies major offered by the College of Liberal Arts allows you to pursue a self-designed course of study, culminating in a senior project, in an area where a major is not currently available.

**Honors**

The University Honors Program offers students many opportunities to develop their intellectual interests. Small class size facilitates discussion, close contact between students and faculty members, flexibility, and independent thought. For specific information about the honors program and application requirements, see the chapter on Academic Standards and Requirements.

The honors program also provides avenues for students to develop their intellectual interests through participation in the Student Honors Association, the honors publication *Chimaera*, and state and national honors organizations.

**Expanding Horizons for Adults**

Adults who are interested in college for personal fulfillment, career preparation or advancement, or a change of direction may participate in the Expanding Horizons Program. The program recognizes that adults who earlier discontinued their education may find the transition back to school a difficult one. Fear of competition with younger students, worry over diminished learning skill or outdated knowledge, and the stress of combining studies, class time, work, and/or family responsibilities are all concern to the adult student. The program provides support and assistance to help minimize these potential problems.

The program offers courses with limited enrollment taught by instructors who are sensitive to the needs of adult students. Introductory courses in English composition, interpersonal communications, basic mathematics, algebra, psychology, and sociology are offered. Students may also select courses in study skills, managing change, overcoming math anxiety, and life/work planning. Counseling, financial aid, academic advising, health services, and career planning are available. Special orientation programs, brown bag lunches with guest speakers, and other activities provide a supportive environment for lifelong learning. Courses are offered during the day, in the evening, and on Saturdays to accommodate the busy schedule of the adult student.

**Officer Training/ROTC**

The Army and Air Force offer the Reserve Officer Training Corps (ROTC) program to any qualified student. The purpose of ROTC is to educate selected men and women for positions of responsibility and afford them the opportunity to be commissioned as second lieutenants in the Army and Air Force. The Army also offers the option for duty in the National Guard or Reserves.

The first two years of both programs have no military obligation. Each offers a competitive scholarship program that pays a student’s tuition, buys all books, and provides $100/month. A student involved in the Advanced or Professional Officer course would also receive $100/month during the school year.

Both programs are available to students with only two or three years remaining in their degree program. Two-year and compression programs have been established to facilitate participation in the ROTC program for freshmen and sophomores, or for juniors and seniors who will be enrolling in graduate study. Through a special program, advanced placement credit may be given to veterans and JROTC students. Graduate students may also be eligible for both ROTC programs.

The Army program is administered in two parts. The basic course emphasizes practical leadership techniques and management concepts that are equally applicable to both military organizations and private industry. The advanced course is designed to prepare students to be commissioned officers by including practical study in tactics, training, management, leadership techniques, and the exercise of command. Students in the advanced course (cadets) are paid $100/month during the regular school year. During the summer quarter between the junior and senior years, they attend a six-week ROTC Advanced Camp which provides them with the opportunity to apply the leadership and technical training received in the classroom. While at camp, cadets are paid half of the salary appropriate to the grade of second lieutenant.

The Air Force ROTC programs are the General Military Course (GMC) and Professional Officer Course (POC). The GMC introduces the student to the Air Force and its history through one hour of class and one hour of leadership laboratory each week. The POC consists of management, leadership, American defense policy, and introduction to command. Six courses involving three hours of class and one hour of leadership laboratory each week.
are required. Summer field training is four or six weeks long and is normally attended between the sophomore and junior years. It emphasizes Air Force careers and leadership development.

Further information is available in the Departments of Military Science and Aerospace Studies.

Resources

Library

The University Library plays a most important role in a student’s learning experience, as well as in research and teaching. The University Library’s collection contains over 345,000 bound volumes, 700,000 microforms, 150,000 U.S. and Ohio documents, and 3,948 periodical subscriptions.

The library’s Department of Archives and Special Collections houses one of the most complete depositories of information on the Wright brothers in the world. The Wright State collection of about 6,000 historical items includes manuscripts and records, a library of books that influenced the Wright brothers, technical journals that covered their progress, family papers, awards, and over 3,600 prints made by Orville and Wilbur Wright from their own negatives.

The archives also contain many other important collections such as the papers of James M. Cox, records of the Miami Conservancy District, and a collection of first editions of American women writers’ books.

Students and the general public who need access to maps can make use of the national map depository in the University Library. The map depository collection includes approximately 55,000 geological and topographical maps from all over the United States.

Computer Services

Academic computing services are provided and coordinated through the Research and Instruction Computation Center (RICC). The major objectives of the RICC are to provide and maintain the general purpose computing programs and equipment needed to support the instructional and research activities of the university.

The computer equipment installed at this time is an IBM 3083E, used for both academic and administrative processing, a DEC VAX 11-780, and numerous personal computers. Many computer languages and programs are installed and are available to students and faculty. Information and guidance in using the facilities are available at the center.

Consortium

Wright State students also have hundreds of additional classes available to them through the university’s membership in the Southwestern Ohio Council for Higher Education, an association which includes many area colleges and universities. As a full-time student at Wright State, you may cross-register for credit at member schools at Wright
State’s tuition rates as long as class space is available, you have your adviser’s consent, and the course isn’t offered at Wright State. You must also meet course and host college prerequisites. The consortium also offers cooperative library privileges to students at all member institutions. These library holdings total more than a million volumes.

Resources for Special Interests

Helping others to understand and to appreciate black American culture and heritage is the goal of the Bolinga Black Cultural Resources Center on campus. The center sponsors lectures and seminars by noted speakers and performances and exhibitions by black artists. It also has audiovisual facilities and a library of special publications and black history books.

The College of Continuing and Community Education, in the Eugene W. Kettering Center in downtown Dayton, offers continuing education programs emphasizing areas beyond those covered by existing degree programs. Professional training in engineering, science, and management for members of the industrial-scientific community is also provided.

In 1977, the university was given national recognition for programs and activities in arts for people with disabilities. Because of our progressive programs in art therapy, the National Committee, Arts for the Handicapped, Washington, D.C., selected Wright State as a national model site and a national resource center. In 1982, a Center for Arts for the Disabled and Handicapped Person was formed and is located in the Creative Arts Center. Wright State continues to hold national prominence in programs and activities in the arts for all people.

The Organizational Services Group (OSG) provides valuable information and services both to the university community and to the community at large. It is composed of six different centers: Consumer and Business Research, Economic Education, Industrial Studies, Professional Development, Research Development, and Small Business Assistance.

The Center for Corporate Concern works with businesses to examine social problems and community needs that could be solved through business initiatives. Drawing on the resources of academia, businesses, government, and public concern, the center seeks to forge new avenues for responsible corporate action.

Placement Testing

During each registration period, the University Division conducts placement testing in reading, writing, and mathematics for students new to the university. Results of these tests help identify present skill levels and aid in selecting appropriate courses for initial enrollment.

Academic Advising

Academic advisers assist students assigned to the University Division with scheduling and academic problems. Advisers help degree-seeking students to meet their university General Education requirements and the admission requirements of their selected major. Advisers also teach a Freshman Seminar which helps provide an overview of some of the aspects of being a student in higher education.

Developmental Education

The Developmental Education program provides free tutoring for all undergraduate students in 100-level courses. It offers instruction in study skills, reading improvement, critical reading, fundamental English skills, and basic mathematics for students who need to improve their skills in these areas before taking college-level courses. Students taking fundamental English and reading improvement courses are scheduled to spend at least one hour per week in the writing and reading laboratories, respectively. The program also provides a special adviser to help students with specific academic needs.

The Special Services Program for Underprepared Students makes it possible for students who are underprepared for college work, either because of inappropriate choices in high school or because of gaps in educational experience, to take additional developmental courses during the fall and winter quarters. These courses include a survey of biology, chemistry, or geology; psychology concepts; oral communication; and career exploration. In addition, the services of a counselor and a staff of peer facilitators are available to enhance psychological adjustment to college life.

In addition, for four weeks each summer the Developmental Education program conducts Wright Start for high school students in the Miami Valley who are considering higher education. Wright State students may participate in the program as a means to review or preview course work. Wright Start is free to all who participate.

Academic Services

University Division

The University Division provides placement testing, academic advising, and developmental academic support services for new freshmen, both degree and nondegree.
Student Life
Student Services

In addition to classes and academic programs, there's much more to discover at a university. At Wright State, we have many services, facilities, and activities to give you the opportunity to enjoy all the benefits of university life. Many people are here to serve you, answer your questions, and help you over any rough spots that might occur.

Wright State's student services are a coordinated group of offices including Admissions, Financial Aid, Student Development, Student Employment, University Placement Services, Expanding Horizons for Adults, Handicapped Student Services, Veterans Affairs, Student Health Services, Student Information Systems, Student Activities, and the Bookstore. Other student-centered areas and activities include the University Center, the Hamilton Hall and University Apartments housing facilities, intercollegiate athletics, intramural sports, and open recreation programs. The Psychological Services Center, located in the Frederick A. White Center, offers personal counseling and seminars.

The student services offices are staffed by professionals who are equipped to help you in particular areas. Most of these services are free and you're invited to visit the offices any time.

The Office of Student Development provides general information and growth opportunities to students and student organizations through a number of programs. New student orientation introduces you to the university and its programs and services through workshops on numerous topics, campus tours, and small group participation.

The Student Handbook, available in the Office of Student Development, is an excellent guide on how to make the best use of Wright State's services and facilities. Written by the Student Development staff, the Student Handbook outlines helpful information for you and lists all the university policies and procedures that govern students. The University Information Center in Allyn Hall answers questions on the spot and can refer you to the appropriate university offices for detailed answers to involved questions.

The Student Development staff also advises student organizations, supervises expenditures from the student activities fund, and is involved in developing policies concerning students. A special Student Development Program provides opportunities to develop leadership and communication skills through weekend experiential workshops offered once per quarter.

International students attending Wright State can find answers to their questions by consulting with the international student adviser, who is a member of the Student Development staff.

On-campus communication is aided by assigning each student who attends classes on the main campus a campus mailbox in the Allyn Hall student lounge. Most official university correspondence is placed in these mailboxes. You are assigned a mailbox in the fall and keep the same mailbox throughout the year unless you fail to register early for winter or spring quarter.

Assessing yourself and devising a career plan can help you get the most out of your college education. University Placement Services involves students and alumni in the process of career choice, and assists them in finding both full-time and part-time positions.

Through workshops, academic courses, cooperative education experiences, career counseling, and occupational testing, the department helps students explore and evaluate factors important to their career planning, such as their potential abilities, skills, interests, values, needs, and priorities. These planning services, supported by an extensive career library, can help you make decisions and find methods to explore the world of work.

Placement services help students develop their career paths through cooperative education experiences and summer and part-time work, and assist seniors, graduate students, and alumni in finding full-time positions.

It's to your advantage to visit the University Placement Services office during your freshman or sophomore year to begin planning for your career and to learn more about the special services available to you throughout your academic program. Juniors, seniors, and graduate students are advised to register for placement services.

If you want to pursue a career in law, medicine, or other professional or graduate field, the Office of Pre-Professional Advising provides a central source of information. The office maintains a reference library of catalogs for law, medical, and graduate schools, and advises students interested in preparing for any of these careers. Each year the office sponsors programs in conjunction with many different law and medical schools and schedules visits by school representatives.

Personal growth, as well as intellectual development, is an important part of your university experience. The Psychological Services Center staff helps students learn to integrate their academic and
personal lives through a variety of experiences. Recognizing the need for life skills development, the center offers individual and group counseling in such areas as increasing self-esteem, assertiveness training, human sexuality, decision making, and adapting to change. Services are also available to assist students in coping with stress as it relates to school, work, family, and personal life situations. Test anxiety, fear of failure, changing values, and uncertainty about future plans are some of the commonly presented concerns.

Students who are interested in these programs or who have other personal concerns may call the Psychological Services Center for an appointment or may visit the center Monday through Friday from 8:30 am to noon and from 1 to 5 pm. All counseling services are confidential and are available to students without charge. The offices are located on the second floor of the Frederick A. White Center.

Extending the opportunities of higher education to people with disabilities is a high priority at Wright State. We rank as a leader in adapted physical facilities, and campus buildings have been designed to be free of architectural barriers. Ramps and ground-level entrances lead to each building and all buildings have adapted restrooms and elevator access to every floor. An underground tunnel system links most campus buildings. Handicapped Student Services promotes the realization of each student's potential by offering services in physical, academic, personal, and/or vocational areas. These services are provided on the basis of individual need, allowing learning-disabled and physically disabled students to pursue college educations.

Physical support services are designed to enable each student to be as independent as possible and include personal attendant care for dressing and hygiene needs; adapted transportation for disabled commuter students; adapted campus parking; assistance in locating adapted off-campus housing; training in activities of daily living to achieve a greater degree of independence; campus mobility orientation for visually impaired students; and adapted athletics and intramural sports.

The academic support services are designed to assist physically and learning disabled students in meeting all academic requirements. These include tape library services and the provision of taped textbooks for students who have visual impairment or a learning disability; test proctoring for students who need reading or writing assistance and/or extra time to complete a test; and academic aids that accommodate individuals with disabilities in meeting class requirements.

The vocational program assists the student in making realistic occupational choices. Opportunities exist in the planning and development of a career, and there are services designed to provide experience at various employment sites. These methods allow the student to make a realistic decision about future careers and ensure that the student is able to meet the demands of the occupation.

Applicants requiring services available for disabled students are strongly encouraged to contact Handicapped Student Services prior to admission to make arrangements for the necessary services.

Veterans who are seeking a degree and who attend school either full time or part time may be entitled to specific benefits. The Veterans Affairs office on campus can help you take full advantage of your educational benefits.

Medical care is available to students in the health clinic in Allyn Hall. Personnel are on duty to handle emergencies during normal working hours, Monday through Friday. Students needing follow-up care will be referred to the Frederick A. White Center. Student health insurance may cover some of the expense of this subsequent medical care. Student Health Services also sponsors preventive health care programs for the university community, such as flu shots and hypertension testing, and community services including visits from the Community Blood Center.

The Department of Security is the official law enforcement agency for the university campus. Information or complaints concerning any emergency or criminal activity should be reported immediately to the security dispatch center at campus telephone extension 2111.

Security is also responsible for the campus lost and found. If you lose or find an article, notify that office. Articles are held for ninety days and, if not claimed, are sold at an auction.

The Parking Services office establishes and regulates the procedures for parking on campus. Parking on the main campus is provided in the general parking zones at no charge to students, faculty, and staff. You do not need a permit to park in general parking zones.

You do need a permit from the Office of Parking Services to park in A (reserved), D (dorm), F (faculty), H (handicapped), R (apartment resident), S (staff), and U (university vehicle) zones.

Handicapped persons may obtain H permits at no charge. Applicants must register with Handicapped Student Services before applying for an H permit at the Office of Parking Services.

Hamilton Hall residents may obtain D permits and University Apartment residents may obtain R permits at no charge. Applicants must show resident ID cards, vehicle registration, and quarterly validation cards when applying for D and R permits.

All persons driving a motorized vehicle to campus are responsible for complying with the Wright State University Motor Vehicle regulations. Complete motor vehicle regulations and information concerning permits are available from the Office of Parking Services.
Facilities

A good place to meet and talk with students, staff, and faculty is the University Center, which includes a cafeteria, private dining rooms, lounges, game rooms, box office, a rathskeller, a computer center, a faculty dining room and lounge, and bookstore. The student-run University Center Board (UCB) schedules seminars, workshops, exhibits, guest speakers, artists, dances, tournaments, and recreation at the center. The facility can also be used for public activities on request. The Office of University and Community Events, which facilitates the planning of official university activities, is available to provide consultation on planning and coordinating special functions.

The University Center Hollow Tree Box Office, managed by the Student Activities Office, handles tickets for both university and community events. The Student Activities Office, on the lower level of the center, serves as a resource to members of the university community in planning a wide range of community-related functions. The office also provides information about various types of entertainment and sponsors the Madrigal Dinner and the College Bowl tournament.

The University Bookstore, owned and operated by the university, is located on the lower level of the center. It stocks textbooks and tradebooks used in Wright State classes as well as a variety of other books, supplies, and gift items. The bookstore also buys and sells used books each quarter. For a limited number of students who want the convenience of living on the campus, the university provides one residence hall, Hamilton Hall, and the University Apartments. The residence hall has furnished rooms and houses both new and continuing students. Most of the rooms in Hamilton Hall are doubles, although some triple rooms are available at reduced rates. Dorm residents are required to purchase a food service plan. The University Apartments contain both four-person furnished apartments and two-person furnished efficiency apartments. Apartment residents may purchase the meal plan if they choose.

Certain minimum academic standards are required of students who live in university housing. All undergraduate students are expected to complete a minimum of thirty credit hours per year and maintain at least a 2.0 grade point average. Graduate students are expected to complete twenty credit hours per year. A student not meeting the academic requirements for on-campus housing may petition the Residence Life Advisory Committee for an exception.

Participation

Sports

For the sports-minded, the university has a well-developed program of intramural sports for men and women. The Department of Intramural Sports sponsors teams in touch football, basketball, bowling, indoor soccer, swimming, wrestling, volleyball, and softball, and individual activities including table tennis, handball, badminton, golf, tennis, and archery. There are also open recreation periods when any student may use the physical education facilities.

Adapted intramurals introduce students who cannot take part in regular intramurals to a variety of recreational activities through an instructional approach. Rules and equipment are modified and activities such as archery, aquatics, billiards, bowling, and racquet squash, as well as individualized therapy programs, are taught.

We believe our intercollegiate athletic program benefits both the student and the university. Students can participate either actively or as spectators, and these sports serve as a link between the university and surrounding community.

The university is a member of Division II of the National Collegiate Athletic Association. Any full-time undergraduate student in good academic standing at the university who meets the requirements of the NCAA may try out for any of the varsity teams. Varsity teams for men include basketball, wrestling, swimming, baseball, tennis, cross country, golf, and soccer. For women, there are varsity teams in basketball, volleyball, swimming, tennis, cross country, soccer, and softball.

The continued growth of the intercollegiate program has been marked by success for many of the men's and women's teams. The men's basketball team won the Division II national championship in 1983 and is a regular participant in the Great Lakes Regional tournament. The golf, swimming, cross country, and baseball teams have all recorded finishes in the top twenty in the country, and the wrestling team has had several individuals finish as all-Americans in the national championships. The women's teams also compete in the NCAA, and the volleyball squad has enjoyed the most success by qualifying for the regional tournament in 1983. In addition, the swim team also placed among the top twenty in its first two years of NCAA competition, and female athletes have earned all-American honors in volleyball, swimming, tennis, and basketball.

Grant-in-aid money is available in varying amounts for each sport. For more information about grant-in-aid money, contact the Athletic Department.

Intercollegiate Wheelchair Athletics provides sports and activities for students who use wheelchairs. Such sports as basketball, swimming, and track and field are available on a competitive intercollegiate basis. Regional, national, and

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international games provide outstanding competition. Wright State is a member of the Central Intercollegiate Conference, the only intercollegiate conference for disabled student athletes in the world.

Music
The Department of Music’s credit and noncredit instrumental and choral ensembles provide an opportunity to develop your musical talent, broaden your education, and make new friends. Ensembles are composed of students with various majors from many departments; you need not be a music major to participate. Some ensembles, however, require an audition. Most groups present one concert a quarter on campus as well as occasional off-campus performances.

There are two choral ensembles, the University Chamber Singers (between sixteen and twenty-four members) and the University Chorus (a seventy-five-to-ninety voice choir). They have performed with the Dayton Philharmonic Orchestra and the Wright State University/Community Orchestra. The Wright State University/Community Orchestra has approximately seventy-five members, about half university students and half community members. Concerto Night, presented each winter, features student soloists. The University Symphony Band and the University Concert Band rehearse Monday, Wednesday, and Friday from noon to 12:50 pm. Instruments are available, and no audition is required for the Concert Band. Other groups include the University Jazz Ensemble and the University Brass Choir.

The Collegium Musicum is a group of music lovers who study and perform vocal and instrumental music composed between 1100 and 1800. Other student ensembles may be formed depending upon interest, enrollment, and faculty availability.

Students and residents of the Dayton area have a variety of opportunities for musical growth and exploration in the noncredit Community Music Division of the Department of Music. A ten-week program of noncredit classes and private lessons is given each quarter. Classes include Beginning Piano, Voice, and Basic Musicianship.

Private lessons are available in most orchestral instruments, as well as classical guitar, folk guitar, harp, and voice. These lessons are taught by faculty, faculty associates, advanced teachers, and selected university students majoring in music. Students must provide their own instruments. Lessons are scheduled by the teacher in consultation with the student, at a time that is mutually acceptable.

The Wright State University Show Choir is jointly sponsored by the Community Music Division and the WSU Alumni Association. A vocal ensemble of sixteen-to-twenty-four university students, they perform jazz, popular, and show music with choreography. An audition is required.
Organizations and Activities

Many opportunities for extracurricular involvement exist through participation in student organizations, clubs, and activities. Departmental clubs allow you to delve into a particular area of study or career field, and several academic departments sponsor honoraries. Eleven chapters of Greek letter fraternities and sororities offer service, social activities, and friendship. Sports, religious, and special-interest clubs provide many avenues for exploring your interests with a group.

Inter-Club Council (ICC) is made up of representatives from the various student organizations on campus. Any student organization registered with the Office of Student Development can be a member of ICC. ICC's purposes are to develop cooperative campus activities and to provide communication among the different student groups. Each year ICC sponsors October Daze, Raider Week, and May Daze, which give member organizations a chance to have money-making projects and recruit new members. It also sponsors two fund-raising events, the Petrofsky Benefit Bash and the Hippie Hop.

For students who wish to put their creative talent to work, there are several student media outlets on campus. The student newspaper, The Daily Guardian, which utilizes editors, writers, proofreaders, salespeople, and photographers, is published four times a week during the academic year. The magazine Nexus comes out three times a year and includes writing and original art work from members of the university community. Chimaera, issued two or three times each year by the University Honors Program, features a wide range of undergraduate writing; essays, book reviews, research papers, poetry, and short fiction are invited for consideration. Students can also work on and off the air at the student-run campus radio station, WWSU.

Many cultural opportunities on campus allow you to both see and participate in the performing arts. The Department of Music presents many concerts and recitals by student and faculty soloists and choral and instrumental groups. University Theatre presents six major productions, several one-act plays, and at least one children's theatre production during the academic year. The theatre department has also offered a motion picture series and the University Center Board sponsors many current popular films, concerts, speakers, and cultural events. The University Art Galleries regularly schedule exhibitions and events, both in the Main Gallery and the Experimental Gallery. The University Artist Series brings nationally known artists to the campus several times a year.

Representation

The Student Government is an elected representative student assembly which officially acts on behalf of the student body. Student government members represent the students through Academic Council and on major committees of the council. Student Government consists of nine students: four from the undergraduate colleges; one each from the School of Nursing, School of Medicine, School of Graduate Studies, and School of Professional Psychology; and one at-large member who serves as chair.

The Academic Council is the major decision-making body of the university, consisting of representatives from the faculty, administration, and Student Government. It deals with academic regulations, curriculum changes, and other university-wide policies.

Students who don't know where to take a grievance, problem, or suggestion can go to the Office of the Ombudsman. The ombudsman provides accurate information about the university, investigates and tries to resolve student problems, and makes students' concerns known to the faculty and administration.
Admission/Registration/Costs
Three offices at the university that you will probably have a lot of contact with are the Offices of Admissions, the Registrar, and Financial Aid.

The staff of the admissions office assists prospective and returning students by providing information about the university, its academic programs, and undergraduate admissions. Staff members also help students complete the application for admission. The office arranges individual and group tours of the campus and can make appointments for students to talk with faculty or advisers in the academic areas in which they're interested.

Included among the duties of the Office of the Registrar are registering students in classes, assessing fees, processing class withdrawals, obtaining fee refunds, accepting applications for graduation, processing grade reports, and issuing academic transcripts to students who request them.

The Office of Financial Aid helps students who have difficulty in meeting the costs of a college education. Although we feel the student and the student's family are primarily responsible for financing a college education, we realize there are many reasons a student's financial resources may be limited.

To assist students who have established financial need, the university offers scholarships, grants-in-aid, loans, and employment. For applications for the various types of financial assistance, contact the Office of Financial Aid.

**Admission**

Ohio students who have graduated from an accredited high school or who have passed a high school equivalency test (GED) are automatically eligible to enter Wright State University. Out-of-state students, however, besides meeting regular admission requirements, must present evidence of above-average ability to do college work (a 2.0 overall high school grade point average).

While Wright State University adheres to an open admission policy as provided in the Ohio Revised Code, the university has adopted a new college preparatory curriculum policy. The policy applies to the admission of undergraduate baccalaureate degree students who enter the university fall quarter, 1987, and thereafter.

The university requires that students have a high school record which is consistent with the recommendations of the Report of the Advisory Commission on Articulation between Secondary Education and Ohio Colleges.

Specifically, the university requires:

1. four units of English
2. three units of mathematics (including Algebra I and II)
3. three units of social science (including two units of history)
4. three units of science
5. two units of a foreign language
6. one unit of visual or performing arts

Students who have not met these standards will enter the university under a directed advising program and will be required to remove deficiencies.

**Degree-Seeking Students**

Freshmen

If you're beginning college work at Wright State with the intention of earning a degree, the procedures for applying are simple. First, get an application form from the Office of Admissions, complete it, and return it with the nonrefundable $25 application fee. Then have your high school send a transcript of your grades to Wright State.

National test scores are not a requirement for admission. You must, however, have either the American College Testing Service score (ACT) or the Scholastic Aptitude Test score (SAT) on file with the University Division before you register for classes.

**Placement Testing/New Undergraduates**

During each registration period, the University Division conducts placement testing in mathematics, reading, and writing for undergraduate students new to the university.

**Mathematics**

All students preparing to enroll for their first college mathematics course are required to take a mathematics placement examination to determine course enrollment. Transfer students who have earned, within the last year, college-level credit in mathematics at a grade of C or above do not need to take the exam.

**Reading and Writing**

Beginning degree-seeking freshmen also are required to take reading and writing placement examinations unless, as part of their admission process, they submit to the university a score of sixteen or above on the English section of the American College Testing Assessment (ACT) or a score of 360 or above on the Scholastic Aptitude Test (SAT). Transfer students who have earned, within the last year, college-level credit in English composition at a grade of C or above do not need to take the exam.

A placement test schedule is available in the Office of Admissions, 127 Student Services.

**Transfer Degree Students**

If you have registered for one or more courses at another college, you are considered a transfer student. To apply for admission, you need to complete the application and return it to the Office of Admissions with the nonrefundable $25 application fee. You must have an official transcript from each college in which you've been registered.
sent to the Office of Admissions. If you have less than forty-five quarter hours of transfer credit, you must also submit a high school transcript or GED scores. All transfer students interested in the School of Nursing who are not already RNs are required to submit a high school transcript.

All transfer students with at least a C average are eligible for admission to the university; admission to some colleges and schools requires a higher grade point average. If you do not meet the grade point average criterion, you must petition for admission. This petition process involves completing both the application form and the petition form (available from the Office of Admissions) plus submitting the nonrefundable $25 application fee and the required transcripts as indicated in the preceding paragraph. If you have been suspended from another institution, you will normally not be considered for admission to Wright State for one calendar year. In the case of unusual circumstances, you may appeal to the University Admissions Committee to have the one-year waiting period reduced.

Transfer Credit Regulations

1. Your credits must have been earned at an institution which is regionally accredited, an Ohio state-assisted institution of higher education, or a member of the Southwestern Ohio Council for Higher Education, or an institution of equivalent quality (as determined by Wright State).

2. You must have earned a grade of C or higher (according to the definition of grades currently used at Wright State). Grades of “pass” and “credit” are considered for transfer credit.

3. The credits must have been acceptable for satisfying the graduation requirements at the source institution.

4. Any credit earned through correspondence study or as a part of an off-campus study program are subject to the same regulations as other transfer credit.

5. If the credits were earned more than ten years before your admission to Wright State, your adviser will determine if the credits are still applicable to your degree.

6. If you have completed three-fourths or more of the Wright State quarterly credit hour requirement for a course or sequence, you may receive credit for that course or sequence. For example, two 3.0 credit hour courses in English composition may be considered the equivalent of ENG 111 and 112 (eight credit hours).

7. Your Wright State academic adviser will determine how your transfer credits are to be used toward the requirements for your major. If there are exceptions to the transfer credit rules, the dean of the major college or school involved will make the decision.

8. If you have earned twenty-four quarter credit hours or less of transfer credit, you will be assigned to the University Division (the freshman advising office) for advising. If you have earned more than twenty-four hours, the Office of Admissions will notify you of your admission to the University Division or the appropriate college or school.

9. General Education requirements for most transfer students will be determined by a course-by-course evaluation. Transfer students with an Associate of Arts degree usually have fulfilled the General Education requirements, but each college will determine if there are any deficiencies. For specific exceptions that apply in the School of Nursing, see the appropriate section of this catalog.

10. The university will accept a minimum of ninety credit hours for an associate degree from a regionally accredited (see Transfer Credit Regulation #1) junior or community college. Also, credit is usually given for all academic college credit hours above ninety for which a grade of C or better has been earned.

11. If you have already received a baccalaureate degree from an accredited institution (see Transfer Credit Regulation #1) and wish to pursue a second baccalaureate degree, you will automatically receive 138 quarter credit hours. You will be ranked as a senior. Your adviser will determine how many credits you will have to complete to receive your second degree.

12. All religion courses taught by a religion department in any state college or university will be considered for transfer credit. These courses are subject to other applicable Transfer Credit Regulations. Religion courses taught by all other colleges must be approved by the religion department before transfer credit is granted.

International Students

Wright State welcomes applications from qualified international applicants. About 170 students on F-1 and J-1 visas currently attend the university. You may request application materials from the Office of Admissions. Applications for admission must be completed two months before the quarter in which you wish to begin studies at Wright State if you live outside the United States; applications must be completed three months before the quarter in which you wish to begin studies at Wright State if you live within the United States.

International applicants are expected to meet the following criteria for admission:

1. Undergraduate applicants must have an educational background that is equivalent to a high school diploma from the state of Ohio. Graduate applicants must have earned a
baccalaureate degree or its equivalent from a college, university, or other institution of higher learning.

Only an official transcript, translated into English, will be accepted as evidence of academic preparation. If your credentials cannot be evaluated by the Office of Admissions, you will be required to submit your credentials to an evaluation service and pay the cost of the evaluation.

2 All international applicants must demonstrate proficiency in English. If your native language is not English, the Test of English as a Foreign Language (TOEFL) is required; a minimum score of 500 is required for admission. Non-native English speaking students will also be tested in English upon arrival at Wright State and required to enroll in appropriate English courses if the testing so indicates.

3 Since there is no financial assistance available for the undergraduate international student, the university must be assured that all international applicants have adequate financial resources to attend Wright State. If you are being sponsored, the financial statement form must be accompanied by an affidavit of support and a bank statement provided by your sponsor, indicating the amount of money available to you for the purpose of studying at Wright State University.

If you are financing your education from personal funds, you must also submit a bank statement together with the financial statement. Bank statements are to be sent by the bank directly to the admissions office.

International students, once admitted, may be required to deposit with the university a full year's tuition before they will be permitted to enroll in classes.

4 Form I-20 will be issued by the international student adviser when you have met the above requirements and have been admitted to the university.

5 International students already in the United States who wish to transfer from another university will not be considered for admission if they are not currently in status according to the Department of Immigration and Naturalization. The transfer student must also present evidence of above-average ability to do college work.

Other Admission Categories

Nondegree Undergraduate Students

If you want to take courses at Wright State but you don't intend to work toward a degree at this time, you can register as a nondegree student. You may take as many courses as you like as long as you meet the requirements for each course. To be eligible to register as a nondegree student, you must have graduated from an accredited high school or passed a high school equivalency test (GED). In order to take junior- or senior-level courses offered by the College of Business and Administration, you must have junior standing in addition to the stated prerequisites.

To apply, you need only fill out a simple application-registration form and pay a $10 one-time registration fee. Later, if you decide to enter a degree program, you can file your credentials and pay an additional $15 application fee. Nondegree work normally can be applied toward a degree program.

Nondegree students may receive academic advising from the University Division and may participate in any of the services of the division, including tutoring and developmental education courses.

For information about nondegree status for graduate students, see the Graduate Catalog.

Certification Candidates

If you are a college graduate who would like to become certified as a teacher, you must apply for admission, file all the necessary credentials, and pay the application fee. We recommend that you meet with a teacher certification adviser when you apply, to have your records evaluated and to plan your program.

Undergraduate students and students who receive degrees from other colleges within the university may also obtain teaching certificates upon completion of all the requirements of the College of Education and Human Services.

Superior High School Students

High school students who have completed their sophomore year may take courses at Wright State while still enrolled in high school. High school seniors must rank in the top twenty-five percent of their class or have a 3.0 overall grade point average. Juniors must rank in the top ten percent of their class or have a 3.5 grade point average. To participate, you must be recommended by your principal or counselor and present written permission from your parent or guardian. High school students who plan to continue at Wright State begin as degree students; those who plan to continue their education elsewhere begin as nondegree students. Under certain circumstances, high school freshmen and sophomores may be eligible to enter the university under this program. If you would like to know more about this program, contact the Office of Admissions.

Returning Students

If you have not attended Wright State for more than four quarters, you must apply for readmission through the Office of Admissions. There is no additional application fee and official transcripts are required only from the schools you have attended since you left Wright State.
If you have been dismissed, you may apply for readmission after remaining out of school for three quarters, by petitioning the University Admissions Committee.

If you have not attended Wright State for five years (twenty quarters), you may wish to take advantage of the Fresh Start Rule. This rule may allow you to have your earlier grade point average recalculated. Contact the Office of Admissions for more information.

Registration

Wright State is on the quarter system. The academic year is divided into three quarters (fall, winter, and spring) and a summer session (two five-week terms or one ten-week term). Classes are assigned values in quarter credit hours. The credit hour is based on fifty minutes of instruction each week for one quarter, although there are exceptions. Laboratory courses usually require considerably more time for each quarter hour of credit. The general rule for time expenditure is that you should plan to spend at least two hours in outside preparation for each hour you spend in class. You should carefully plan your academic program with an adviser, especially if you’re also working while going to school. However, you are responsible for registering in appropriate classes, scheduling, and fulfilling all university and program requirements for graduation.

The minimum full-time undergraduate load is twelve credit hours per quarter with the average between fourteen and seventeen credit hours. The normal full-time load during each five-week summer term is between six and nine credit hours.

If you’re employed full time, we recommend that you register for no more than six quarter hours, or two courses, during the regular academic year and for just one course at a time during the summer.

Registration dates are announced in the quarterly schedule of classes. Currently registered students receive their registration forms in their campus mailboxes, located in the lounge of Allyn Hall. Students who are not currently registered, but who have been registered any time during the past year, receive their registration forms in the mail.

There are three different registration periods. If you take advantage of the early registration period, there is a specific deadline for paying your fees. That deadline date is published in the quarterly class schedule. If you don’t pay by the deadline, your registration will be canceled to make room for students who register later. During open registration you must pay fees at the time you register. Late registration allows you to register during the first week of classes; there is an additional fee for late registration. You cannot register after the first week unless you have the permission of the instructor, department chair, and the school or college dean. No one may register after the second week of the quarter.

To make a change in your registration, you must first submit a Change of Program form to the Office of the Registrar and pay the appropriate fee. There is no fee for adding courses or for withdrawing from all your classes at any time. No fee is charged if you make changes before classes begin.

You may drop a course or withdraw from the university without grades through the third week of the quarter, or its equivalent. These courses won’t be recorded on your transcript. From the fourth through eighth weeks, or their equivalents, you may drop a course or withdraw, but the course and its designation of “W” will appear on your record. Please see the quarterly class schedule for the exact dates. After the withdrawal date, you need to petition to drop; otherwise, the course will appear on your record with a grade.
### Quarterly Fees for Undergraduate Students

<table>
<thead>
<tr>
<th>Hours/Per Hour</th>
<th>Main Campus</th>
<th>Western Ohio Branch Campus</th>
<th>WSU Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 through 10.5 hours/Per hour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Instructional and general fees</strong></td>
<td>$53</td>
<td>$48</td>
<td>$45</td>
</tr>
<tr>
<td><strong>Nonresident tuition/add to above</strong></td>
<td>$53</td>
<td>48</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total: Ohio resident</strong></td>
<td>$53</td>
<td>$48</td>
<td>$45</td>
</tr>
<tr>
<td><strong>Total: Nonresident</strong></td>
<td>106</td>
<td>96</td>
<td>90</td>
</tr>
</tbody>
</table>

#### 11 through 18 hours

<table>
<thead>
<tr>
<th>Hours/Per Hour</th>
<th>Main Campus</th>
<th>Western Ohio Branch Campus</th>
<th>WSU Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructional fee</strong></td>
<td>$450</td>
<td>$450</td>
<td></td>
</tr>
<tr>
<td><strong>General fee</strong></td>
<td>112</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td><strong>Nonresident tuition/add to above</strong></td>
<td>562</td>
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<tr>
<td><strong>Total: Ohio resident</strong></td>
<td>$562</td>
<td>$503</td>
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</tr>
<tr>
<td><strong>Total: Nonresident</strong></td>
<td>1,124</td>
<td>1,065</td>
<td></td>
</tr>
</tbody>
</table>

*The hourly rate applies to all credit hours in excess of 18.*

### Additional Fees and Charges

- **Late registration fee**: $25
- **Nondegree application fee**: $10
- **Application fee to change from nondegree to degree student**: $15
- **Audit fee per credit hour (laboratory and special courses not open to audit)**: same as for credit courses
- **Drop fee (one course/two or more courses)**: $7/10
- **Fee for courses under Educational Benefits Policy per credit hour**: $11
- **Cooperative Education quarterly fee for noncredit**: $50
- **Transcript fee/first request**: $2
- **Each additional at same time**: 50 cents
- **Undergraduate and graduate degree and certification application fee**: $25
- **Returned check penalty per check**: $15
- **Applied music fee**
  - one half-hour lesson per week: $43
  - one hour lesson per week: $85
- **Proficiency test per credit hour**: $10
- **Graduation fee**: $15
- **International student fee**: $40

The Educational Benefits Policy applies only to undergraduate and master's level course work. Some courses may require additional fees to cover travel, individual instruction, or materials; check the course descriptions in this catalog and the departmental offices. Fee schedules are subject to change depending on action by the state legislature and approval by the Ohio Board of Regents and the University Board of Trustees. The quarterly fees listed here for the main campus, Western Ohio Branch Campus, and Wright State University Extension are those in effect when this catalog went to press. For an up-to-date list, you should consult the Office of the Registrar. Library fines are set by the university librarian with the approval of the president.
Paying Fees

The method for paying fees depends on which registration period you use. See the previous section on registration for a description of the different registration periods.

Students will find fee payment deadlines for each registration period in the university calendar published in the quarterly schedule of classes. If you register early and do not pay the fees by the required due date, your registration will be canceled in order to make classroom space available to other students. If you register during the open registration period, you must pay all fees and charges at the same time that you register.

Students are encouraged to pay fees by check or money order, made payable to Wright State University and sent to the attention of the bursar. The check or money order should be written for the exact amount due. Incorrect checks will be returned to you, and registration will proceed on schedule if a new check or money order for the correct amount is received by the published deadline date for the payment of fees.

You also may use either MasterCard or VISA credit cards to charge most fees paid to the university. In order to use a credit card, you must either be the cardholder or have the cardholder’s authorization. All charge transactions are subject to approval by the financial institution that issued the credit card.

You have the option of using the Student Installment Payment Plan (SIPP) to spread quarterly fees for tuition, insurance, and university housing (if applicable) over a three-month period. The plan is offered as an alternative to the single payment for fees that is normally due at the beginning of fall, winter, and spring quarters. SIPP is not offered during the summer quarter. For a $15 nonrefundable fee, preregistered students pay one-third of their fees by the published fee payment deadline. The balance is divided into two installments which are payable at established dates about thirty days apart. If you participate in open registration, you must pay the $15 fee and the initial installment on the day you register. The second and third payments are due on the same dates established for those who have preregistered. Further information about SIPP is available at the Bursar’s Office.

Payment of fees can be mailed to the attention of the bursar or presented in person at the cashier windows in Allyn Hall. Mailed payments should be sent to ensure their receipt by the fee payment deadline. Mailed payments received after the deadline will be returned and the original registration will be canceled.

Any payment made with a check not honored by the bank will result in a student’s registration being canceled unless satisfactory payment arrangements are made within seven days after appropriate notification is mailed to the student. A returned check charge is assessed for each check not honored by the bank. All charges, including the returned check charge, must be paid by the date indicated in the notification.

Financial accounts may be audited at any time during your enrollment or academic career. If an error is identified, a bill or refund will be issued. The university will issue a refund within thirty days or apply the credit to your account. If you do not make acceptable arrangements to pay any amount due within thirty days after notification, your current registration will be canceled.

Refunds

A current schedule of refunds can be found in the quarterly schedule of classes. Refunds relating to withdrawal are initiated through the Office of the Registrar. Refunds will be calculated as of the date of official withdrawal, unless proof is submitted substantiating circumstances which were beyond the control of the student (e.g., hospital confinement) and which prevented the filing of the official withdrawal at an earlier date. In such a case, the refund will be determined as of the date of said circumstances. Nonattendance of classes or notification of the instructor or department does not constitute official withdrawal. Refunds or reduction of indebtedness for withdrawals after the official dates will not be made in cases of failure or inability to attend classes because of changes in business (e.g., work schedule) or personal affairs (e.g., illness).

If you officially withdraw from the university before the first day of classes, you will receive a 100 percent refund of instructional and general fees paid.

If you withdraw during the first two weeks, or equivalent portion, of the quarter, you will receive a credit based on eighty percent of the fees assessed. If you withdraw during the eighty percent period you will be charged twenty percent of the total instructional and general fees assessed, regardless of how much you have paid at the time of withdrawal. If you are on the installment payment program, the charge of twenty percent of the instructional and general fees will be subtracted from your payments to determine the amount of any refund.

No refunds will be granted after the first two weeks of classes. If you withdraw while owing the university money, you will be considered to be indebted to the university for that amount. Therefore, all refunds will be applied to any indebtedness before being issued to the student. All refunds will be issued thirty days after the date of withdrawal from the university.

A student who drops courses during a partial-refund period will receive the refund according to the published refund schedule that will be in compliance with the policy for complete withdrawal.
All refunds of fees other than instructional and general fees must be approved by the responsible office or department before submission to the Office of the Bursar (e.g., room and board refunds must be approved by the director of housing).

Appeals regarding charges and refunds of instructional fees, late registration fees, and drop fees must be submitted in writing to the Office of the Registrar. Appeal procedures are available in that office.

**Criteria for Ohio Residency**

Students who are nonresidents of Ohio must pay a nonresident fee in addition to other fees and charges.

The following general rules, established by the University Board of Trustees, determine who can be considered an Ohio resident and cite specific exceptions to the general rules.

Persons in the following categories are classified as residents of the state of Ohio for subsidy and tuition surcharge purposes.

1. Dependent students, at least one of whose parents or legal guardian has been a resident of the state of Ohio for all other legal purposes for twelve consecutive months or more immediately preceding the enrollment of the student in an institution of higher education.

2. Persons who have resided in Ohio for all other legal purposes for at least twelve consecutive months preceding their enrollment in an institution of higher education and who are not receiving, and have not directly or indirectly received in the preceding twelve consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.

3. Persons who reside for all legal purposes and are gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who are pursuing a part-time program of instruction at an institution of higher education.

Specific exceptions and circumstances include:

1. A person on active duty status in the United States military service who is stationed and resides in Ohio and his or her dependents shall be considered residents of Ohio for these purposes.

2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of that person's domicile.

3. Any alien who holds an immigration visa or is classified as a political refugee, shall be considered a resident of the state of Ohio for state subsidy and tuition surcharge purposes in the same manner as any other student.

4. No person who holds a student or other temporary visa shall be eligible for Ohio residency for these purposes.

5. A dependent person classified as a resident of Ohio who is enrolled in an institution of higher education when his or her parents or legal guardian remove their residency from the state of Ohio shall be considered a resident of Ohio for these purposes during continuous full-time enrollment and until his or her completion of any one academic degree program.

6. In determining residency of a dependent student, removal of the student's parents or legal guardian from Ohio shall not during a period of twelve months following such removal constitute relinquishment of Ohio residency status otherwise established under this rule.

7. Any person once classified as a nonresident, upon the completion of twelve consecutive months of residency in Ohio for all other legal purposes, may apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes. Should this person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, this person shall be reclassified as a resident. The institution may require, among other things, the submission of information regarding the sources of a student's actual support to that end.

8. Any reclassification of a person who was once classified as a nonresident for these purposes shall have prospective application only from the date of the reclassification.

9. A person who is transferred by his or her employer beyond the territorial limits of the fifty states of the United States and the District of Columbia while a resident of Ohio for all other legal purposes as long as Ohio remains the state of such person's domicile.

10. A person who has been employed as a migrant worker in the state of Ohio and his or her dependents shall be considered a resident for these purposes provided such person has worked in Ohio at least four months during each of the three years preceding the proposed enrollment.
Financial Aid

The Office of Financial Aid makes every effort to assist students who would be unable to attend school without receiving some form of financial aid. If you feel you need help in financing your education, you should apply for assistance through the following programs. If necessary, you should meet with a financial aid staff member to arrange an appropriate financial aid package.

Financial aid, with the exception of four-year scholarships, is granted on a three-quarter basis (summer financial aid requires separate applications). In order to be considered for aid on a continuing basis, you must apply each year that you plan to attend.

The application deadlines for financial aid vary by program. You should contact the Office of Financial Aid for details.

Grants

Grants are forms of gift aid which are not repaid. They are available to undergraduate students and are based on financial need. The Ohio Instructional Grant is available to students who are residents of the state of Ohio and attend college full time. You must apply directly to the Ohio Board of Regents by completing a separate Ohio Instructional Grant application.

Students carrying at least six credit hours are eligible to apply for the Pell Grant and Supplemental Educational Opportunity grants. To be considered for the Pell Grant, you must complete either a separate Pell Grant application or a Financial Aid Form (FAF). The Supplemental Grant requires the completion of the Financial Aid Form and the Wright State application for financial aid.

Scholarships

Scholarships are forms of gift aid which are not repaid and may be based either on academic excellence or on both academic excellence and financial need. Wright State is committed to academic excellence and has developed a scholarship program which recognizes students who have demonstrated their academic ability, involvement in extracurricular activities, and creative ability. Most scholarships available through the university range from $500 to $2,500 per year. Many of the scholarships awarded to incoming freshmen are renewable for up to four years, and are based on ACT/SAT scores, class rank, high school grade point average, writing ability, letters of recommendation from teachers, and extracurricular involvement. Scholarship awards to continuing Wright State students are based on academic records, recommendations from professors, extracurricular activities, and writing ability. Talent
scholarships are awarded to both incoming and continuing undergraduates who demonstrate outstanding talent in theatre arts, music, or art.

Scholarship applications may be obtained from high school counselors or the Wright State University Office of Financial Aid. To be considered for scholarships based on both academic performance and financial need, you must complete the Wright State application for financial aid and the Financial Aid Form; please note, however, that most scholarships available through the university are not based on financial need. Wright State must receive scholarship applications from incoming freshmen by February 1, from continuing undergraduate students by April 1, and from undergraduate transfer students by April 15. Application for scholarships available through local industries, foundations, and agencies should be made directly to the organizations. Students can obtain application information about Army and Air Force ROTC scholarships directly from the ROTC offices. For further information about applying for scholarships, students should contact the coordinator of scholarships in the Office of Financial Aid.

The following scholarships are available for Wright State students:

Incoming Freshmen

Wright State University Foundation Scholarships are awarded in the amount of $800 per year to students who demonstrate academic excellence. Many of these scholarships are renewable. Students must have a minimum high school grade point average of 3.25 to apply.

The Wright State University Board of Trustees has established the Trustees Scholarship in the amount of $2,500 per year for four years of study. It is the university’s most prestigious award and is bestowed upon an incoming freshman each year. Applicants must rank in the top five percent of their high school classes and have a minimum ACT composite score of twenty-eight or SAT totals of 1,200 or above (ninety-fifth percentile scores). The recipient is chosen on the basis of academic achievement and potential, extracurricular activities, written and oral communication skills, and recommendations from teachers and guidance counselors.

Honors Scholarships are awarded to incoming freshmen who intend to participate in the Honors Program and graduate as University Honors Scholars. Six scholarships in the amount of $2,000 per year for four years are awarded. Applicants must exhibit outstanding writing and verbal ability as well as commitment to independent and intensive study.

Dr. William H. Sells and Family Memorial Scholarships, in the amount of $1,800 per year for four years, are awarded to students who demonstrate exceptional academic ability, participate in extracurricular activities, and show evidence of good citizenship. Applicants must score above the ninetieth percentile on the ACT or SAT, have a high school grade point average greater than 3.5, and be recommended for the award by a high school guidance counselor or principal.

National Merit Scholarships are awarded to finalists who designate Wright State as their first choice of colleges to the National Merit Corporation. Wright State provides scholarship assistance up to the amount of tuition for four years, in addition to any scholarship awards made by the National Merit Corporation. Students must be named as finalists by the National Merit Corporation to be eligible.

Valedictorian/Salutatorian Scholarships are awarded to students who rank as first or second in their graduating class. Recipients are awarded $1,000 per year, and the awards are renewable for four years. While students do not compete for these scholarships, they must submit a scholarship application for consideration. Guidance counselors must verify the applicant’s class standing. The salutatorian will be considered provided the valedictorian does not accept the scholarship.

Ohio Academic Scholarships are awarded by the Ohio Board of Regents to an outstanding student from each high school in Ohio. These awards are in the amount of $1,000 per year for four years. Wright State matches the first year’s award of $1,000 for any Ohio Academic Scholar who elects to attend Wright State University.

The Ohio War Orphans Scholarship Program provides assistance for instructional and general fees to dependent children under twenty-one whose parent served for ninety days as a member of the armed services during the following periods: April 6, 1917, to November 11, 1918; December 7, 1941, to September 2, 1945; June 25, 1950, to July 19, 1953; or August 5, 1969, to May 7, 1975.

Chemistry, Materials Science and Engineering, and Geophysics Scholarships are awarded by academic departments to outstanding applicants. These science scholarships are designed to encourage careers in chemistry, materials science and engineering, and geophysics. Awards range from $500 to $1,000 per year.

Creative Talent Scholarships are awarded to incoming freshmen who intend to major in theatre arts, music, or art at Wright State. Applicants must demonstrate creative ability through an audition or portfolio review. Awards range from $500 to $1,500 per year, and many are renewable. Separate applications are required for these programs; students should contact the Department of Theatre Arts, the Department of Music, or the Department of Art and Art History to obtain further information.
Minority Scholarships in the amount of $1,500 are awarded on the basis of academic potential and ability. These scholarships are renewable, provided that the student meets the requirements for renewal. Special consideration is given to applicants who receive recognition through the National Achievement Scholarship Program.

A $500 William Brent Turner Scholarship is awarded to a nursing major who demonstrates academic ability and financial need. Preference is given to applicants who are graduates of Cedarville, Jamestown, or South Charleston High Schools. Applicants must submit a Financial Aid Form to the College Scholarship Service by January 15 of the year prior to their intended admission.

The Robert G. Chollar Memorial Scholarship is awarded to a student who resides in Montgomery County and who intends to major in a scientific discipline. Applicants must demonstrate financial need and must file a Financial Aid Form with the College Scholarship Service by January 15 of the previous year.

Out-of-State Students

Out-of-State Scholarships in the amount of nonresident fees for one year are awarded to help new and continuing students from other states meet the cost of nonresident fees. Awards are made to students who exhibit academic promise.

Undergraduate Transfer Students

Transfer Scholarships are available to students who have a very good academic record at another university or college and who intend to pursue full-time studies at Wright State. Applicants who will complete or who have completed an associate degree at another college or university will be given special consideration. Scholarships are awarded for two academic years and are in the amount of tuition and general fees.

Continuing Undergraduate Students

Continuing students who have demonstrated strong academic achievement by attaining at least a 3.4 cumulative grade point average at Wright State may apply for Wright State University Foundation Scholarships. Applicants compete for these scholarships with other scholarship applicants who are enrolled in their own college or professional school and are selected by a committee comprised of faculty members in their college or professional school. Scholarships range from $500 to $800 for one year.

Alumni Association Scholarships are designed to promote three principal segments of the Wright State student body: those students who have demonstrated a capacity for academic achievement (have earned at least a 3.0 grade point average); those students with a high potential for future public service; and those students who reflect a tradition of Wright State education in their families. Upperclass standing and financial need are desirable characteristics, but are not essential. Recipients must register for at least nine hours per quarter. Five $1,000 scholarships are awarded annually.

A $300 Fairborn Optimist Club Scholarship is awarded to a continuing Wright State student who is disabled or pursuing a major in rehabilitation or special education. A student must be a Fairborn or Greene County resident who has financial need and is in good academic standing. Applicants for this scholarship must submit a Financial Aid Form with the Wright State University Scholarship Application.

WHIO Radio provides a $1,500 scholarship to an outstanding communication major who has at least a 3.4 overall grade point average and at least a 3.5 grade point average in communication courses. The student must be a sophomore or junior at the time of application; the scholarship is to be used in the junior or senior year.

The Presidential Scholarship of $2,500 is awarded to an outstanding senior who is selected by the president from nominations by the Colleges of Business and Administration, Education and Human Services, Liberal Arts, and Science and Engineering, and the School of Nursing. The recipient pursues an independent research project for credit under the direction of the president of Wright State University.

The Fred A. White and Robert S. Oelman Transfer Scholarships were established by the Wright State University Foundation to recognize the achievements and dedication to Wright State University of these two distinguished founders. One Fred A. White Scholarship and one Robert S. Oelman Scholarship are awarded each year and cover full instructional and general fees.

The Frank L. Salsburg Memorial Honors Scholarship, in the amount of $1,800, is open to junior and senior honors students who have at least a 3.4 cumulative grade point average and who are working toward graduation with departmental honors or as University Honors Scholars.

Distinguished Senior Awards of $1,500 each are awarded each year to two outstanding senior honors students who are completing requirements for graduation with departmental honors or as University Honors Scholars. The awards are aimed at recognizing outstanding accomplishments in research.

The Montgomery County Medical Society Auxiliary (MCMSA) awards scholarships to full-time students who are enrolled in a degree program in medicine or nursing. Applicants must be residents of Montgomery County or contiguous counties and must have at least a 3.0 cumulative grade point average.
The Ohio War Orphans Scholarship Program provides assistance for instructional and general fees to dependent children under twenty-one whose parent served for ninety days as a member of the armed services during the following periods: April 6, 1917, to November 11, 1918; December 7, 1941, to September 2, 1945; June 25, 1950, to July 19, 1953; or August 5, 1969, to May 7, 1975.

Foundation Scholarships are available to Wright State students through the generosity of the following individuals, organizations, foundations, and corporations: Centerville Women’s Civic Club; Iddings Foundation; Dayton Exchange Club; Rike’s Family Foundation; William H. Sells Memorial Foundation; Hewitt Memorial Fund; DuBois Memorial Fund; Eva Kmetec Memorial Book Fund; Fetsko Fund; Leslie Sayre Grant; Fairborn Lioness Club; Shellhouse Fund; WDAO/WAVI; Amoco Foundation; Union Oil Foundation; Pilot Club International; Armaco, Inc; Victor Cassano; Robert Half Personnel Agencies; Association for Computing Machinery; SOHIO; ARCO, Stumps, Inc.; Hobart Corporation; NCR; Dow Chemical Company Foundation; Dayton Power and Light Company; Engineering and Science Foundation; Donna Vance Memorial Fund; Etta Biles Memorial Fund; George Lucas Memorial Fund; The Wright State University Campus Scholarship Campaign; Accountancy Alumni Association; Gray Memorial Fund; Ellen Wiedeman-Berger Memorial Fund; and Civitan International Club.

Loans
Loans, which are repaid starting six months after graduation or termination of half-time (six hours) studies, are available to both undergraduate and graduate students. You can apply for the low interest (five percent) National Direct Student Loan by completing the Financial Aid Form and the Wright State application for financial aid. Applications for the Guaranteed Student Loan, which has an eight percent interest rate, may be obtained from a commercial lending institution, such as a bank, credit union, or savings and loan association. Students who are officially admitted to the School of Nursing are eligible to apply for the Nursing Loan. The Nursing Loan has a six percent interest rate and repayment begins nine months after graduation or termination of half-time (six hours) nursing studies. The Financial Aid Form and the Wright State application for financial aid are necessary in order for you to be considered for this loan.

The university has established a short-term loan fund to help students with emergencies. This program allows you to borrow up to $150 per quarter for books and personal expenses. To qualify, you must have at least a 2.0 cumulative grade point average, have attended Wright State before the loan request, and have a cosigner (for the first request). Long-term educational loans are available also from private foundations and philanthropic organizations. Eligibility criteria vary, but all of the loan programs require at least half-time enrollment status. Application forms for several of these loan programs are available through the Office of Financial Aid.

Student Employment
Student employment is available to students who wish to work to help finance their education. You can obtain information about job opportunities through the Office of Student Employment. Students may be employed through the federally funded College Work-Study Program or the regular employment program. The Financial Aid Form and the Wright State application for financial aid must be completed for you to be considered for college Work-Study. There are no financial eligibility requirements for students who wish to work under the regular employment program. Student employees may work up to twenty hours per week while classes are in session and up to forty hours per week during breaks.

Veterans’ Benefits
G.I. Bill benefits can be used by veterans and active-duty personnel who served during the post-Korean and Vietnam periods. Veterans who served on active duty for more than 180 continuous days, any part of which occurred after January 31, 1955, but before January 1, 1977, and who were released under conditions other than dishonorable, are eligible. Veterans who were released from active duty after June 1, 1966, have eligibility for ten years after their last discharge or release, or until December 31, 1989, whichever is earlier.

Applications are available from the Veterans Affairs office at Wright State University or from any Veterans Administration office. Educational opportunities are available for children, wives, and widows of veterans whose deaths or permanent total disabilities were service-connected and for wives and children of servicemen declared missing in action or prisoners of war.

Tutorial assistance is available to students who are receiving benefits under Chapters 31 (vocational rehabilitation) and 34 (regular G.I. Bill benefits). Assistance is given to vocational rehabilitation students according to need while Chapter 34 benefits are limited to a maximum of $79 per month.
Academic Standards and Requirements
The university has several requirements which must be met by every candidate for a bachelor's degree, including the following: you must complete a minimum of 183 hours of credit in approved courses; earn a cumulative average of 2.0 or better; complete the General Education requirements; and fulfill the university's on-campus credit regulations.

Students must meet the university's graduation requirements current at the time they enter the university or, if they have been enrolled continuously, they may choose a subsequent set of requirements which becomes effective while they are pursuing studies at Wright State. In addition, you must meet the requirements of your college or school and department.

The student is responsible for registering in appropriate classes, scheduling, and fulfilling all university and program requirements for graduation. Students are encouraged to contact advisers in the University Division or colleges and schools for information and guidance in formulating their program of study.

The residence requirements which must be met to receive a baccalaureate degree from Wright State include: a minimum of forty-five hours of course work to be taken at Wright State, at least fifteen of the last forty-five hours of credit must be taken at Wright State, and a minimum of thirty hours of courses numbered 300 or above are to be taken at the university. See college requirements for specific details.

If you hold a baccalaureate degree from an accredited institution, including Wright State, and wish to earn a second baccalaureate degree at Wright State, you must satisfy the requirements of the department and college from which the second degree is to be received. At least the last forty-five hours of course work are to be taken at Wright State, twenty-three of which must be in courses numbered 300 or above. These forty-five hours are in addition to the minimum of 183 hours required for the first degree.

University Honors Program

The University Honors Program is designed to meet the special needs of superior students. If you're an incoming freshman, you can qualify if you meet at least two of the following criteria: (a) a score at or above the ninetieth percentile on the ACT; (b) a high school grade point average of at least 3.25; or (c) a ranking in the top ten percent of your graduating class. If you're a continuing Wright State student with at least a 3.0 grade point average, you are eligible to participate.

The honors curriculum offers a variety of undergraduate courses, including General Education courses and interdisciplinary seminars for upper division honors students. Students may also undertake honors programs in their major fields; these are usually available in the junior and senior years and feature independent study in specialized areas. To enroll in an honors program in your major field, you need the approval of the appropriate department, college, or school.

To graduate with the distinction "University Honors Scholar," students must successfully complete eight courses in the Honors Program, including at least one course from the UH 201, 202, 203 sequence; at least three courses that are classified as General Education courses (these may include UH 201, 202, 203), and at least two interdisciplinary seminars (UH 400). To complete the eight-course requirement, students may choose from any other courses designated as University Honors courses, except UH 400 seminars. Those who complete departmental, school, or college programs, but not the entire eight-course requirement, graduate "with honors" in their major fields. Students participate in the Honors Program at their own pace and remain free to take as many or as few honors courses as they wish. All honors courses are so designated on the student's transcript.

The Honors Program also offers social, cultural, and leadership development opportunities through participation in the Student Honors Association; the honors magazine Chimaera; the Mid-East Honors Association, the National Collegiate Honors Council, and the University Honors Committee. The Honors Program awards scholarships to both incoming freshmen and upperclass honors students. Small grants are available to assist students working on honors projects.

Consult the Honors Program office for additional information and applications.

Scholastic Regulations

The Academic Council at Wright State has formulated the following regulations and procedures concerning scholarship and advising at the university.
The Grading System

Your academic achievement is indicated by the following letter grades and points used in calculating grade point averages.

A
Highest quality/4 points per credit hour

B
Second quality/3 points per credit hour

C
Third quality/2 points per credit hour

D
Lowest quality/1 point per credit hour

F
Failed/0 points per credit hour

X
Failure to complete a course for which registered, without officially withdrawing/0 points per credit hour

Your Wright State grade point average is obtained by dividing the number of points you've earned at Wright State by the total number of hours you've attempted, excluding the following symbols, which appear on your record, but are not used in computing grade point averages.

L
Audit; given only if arranged when you register.

N
No report; the instructor did not report a grade

P
Passing; given only for separately approved courses

S
Satisfactory performance; final grade assigned upon completion of the project.

U
Unsatisfactory performance.

I
Incomplete; given only when part of required work is missing and arrangements have been made with instructor to complete the work. If the work is not completed by the end of the following quarter, the I grade automatically is considered equivalent to an F and the grade point recalculated, unless the instructor submits another I grade. Work for an incomplete received spring quarter does not have to be completed until the end of the following fall quarter.

T
Attended; this grade is used only for honors courses. These hours are not counted toward graduation.

W
Withdrawn; given for courses from which the student withdrew or dropped during the fourth through eighth weeks of classes or equivalent or for which student petitioned for withdrawal.

Grade reports are sent at the end of each quarter to the addresses on file in the registrar's office. If you notice any discrepancy on the report, contact the Office of the Registrar within thirty days.

Academic Standing

Students who attain high grade point averages during a quarter are placed on the Dean's List. To be named to the list, you must have at least a 3.4 grade point average for the quarter; have attempted for the quarter at least Twelve hours of credit for courses in which you have received grades of A, B, or C; and you cannot have received a grade of F, X, D, I, or N.

The categories for the Dean's List are: 3.4-3.4999, honors; 3.5-3.999, high honors; 4.0, highest honors.

An undergraduate student may repeat once any course for which the grade of D, F, or X was received. You may repeat once some courses taken previously in your major field for which you received a grade of C if you have prior permission from your adviser and the approval of the college or school petitions committee, along with the concurrence of the Undergraduate Petitions Council.

Whenever you repeat a course under these terms, you must specify this on the course registration form when you register. Under these circumstances, only the hours and grade points earned the second
time you take the course will be included in computing your grade point average and applying the course toward meeting degree requirements.

Your cumulative grade point average at the end of the quarter will reflect the drop of previous hours and grade points of the repeated course. However, all grades and grade point averages and academic actions for earlier terms will remain unchanged on your record. In the calculation of cumulative grade point averages for honors, each of your recorded grades will be counted.

This regulation is concerned only with academic credit; the limitation relates to the number of times you can receive credit hours and grade points for the same course. It in no way places limits on your learning experience, and you may take a course as often as you wish for the content or prerequisite requirements.

You may not repeat a course after graduation in order to alter your final grade point average at the date of graduation. You may repeat a course later, but the second grade will not affect your undergraduate grade point average.

If class space permits, you may audit a course with written approval from the instructor before you enroll. The amount of participation required of an auditing student is left to the discretion of the instructor, but it can't exceed that required of regular students. Audited courses may not be used to establish full-time status, and you may not change your registration from audit to credit after the first class meeting.

Undergraduate students are classified by the total number of credit hours earned at Wright State plus any transfer credits that have been accepted by the university.

- Freshman 0-44.9 hours
- Sophomore 45-89.9 hours
- Junior 90-135.9 hours
- Senior 136 hours or more

Before you graduate, you must submit an application for a degree. The following filing periods, based on your anticipated date of completion (indicated in parentheses), have been established by the university.

- September 1 to October 1 (December)
- December 1 to January 15 (March)
- February 1 to March 1 (June)
- May 1 to June 1 (August)

If your degree requirements are not completed in time, you must file another application for a later completion date.

Students who complete their degree requirements during winter or spring quarters receive their diplomas at the June commencement. Those who complete their degree requirements during summer or fall quarters receive their diplomas at the December commencement.

Undergraduate students who compile outstanding academic records are recognized at commencement. Honors are based on the following: summa cum laude recognizes a cumulative grade point average of at least 3.8; magna cum laude, a cumulative grade point average of at least 3.6; and cum laude indicates a cumulative grade point average of at least 3.4.

Honors are calculated on the basis of your grade point average as of the date of graduation. Change of grades or removal of incompletes (I) from your record will not be considered for higher honors, but they can be considered if the change would lower the honors awarded.

To be eligible for honors at graduation, you must have completed at least ninety credit hours at Wright State.

Students deemed eligible to continue study at Wright State are considered to be in good standing, even if they are on warning and/or mandatory advising. The registrar takes action placing a student on warning and/or mandatory advising. Dismissal action is taken by the dean of the student's college or school. Scholastic actions are determined on the basis of quarter hours computed in the Office of the Registrar. Since credit hours for transfer, proficiency, and grades of S, P, and I aren't used in computing quarter and cumulative averages, they are not considered in determining scholastic action.

A student carrying nine or more credit hours in any quarter is subject to scholastic action. A student carrying fewer than nine credit hours is subject to scholastic action at the close of the quarter in which the total credit hours completed or attempted reaches or exceeds twelve and then at the completion of each quarter thereafter in which a similar twelve-hour increment is attained.

A student is placed on warning whenever the quarterly grade point average is less than 2.0. A student on warning is continued on warning if either the cumulative or quarter grade point average (but not both) is below 2.0.

When students are placed on warning and are so informed, they are assigned an academic adviser, if they don't already have one, by their college, school, division, or department. It will be recommended that they seek advice from the adviser as long as they are on warning. It may be recommended that students seek counseling and/or remedial assistance, limit the course load and/or the nature of their courses, restrict outside employment, and/or have their course selections approved before registration.

A student on warning is placed on mandatory advising if both the quarter and cumulative averages fall below 2.0. A student will be continued on mandatory advising until both the cumulative and quarter grade point averages are 2.0 or above.

Whenever a student brings both the quarter and cumulative averages up to at least 2.0, he or she is removed from both warning and mandatory advising.
A student on mandatory advising status must have course selections approved by the advisor before registering for classes. The advisor's approval will also be necessary for any drop-add transactions. The student may be required to pick up the registration form from the advisor, and may also be limited to a twelve-hour load if the advisor feels such a restriction is necessary. Counseling, remedial work, course repeats, and other steps may be suggested. In addition to working with the advisor, the student will be under review by the department chair.

A student who has been continued on mandatory advising may be dismissed from the university if it is apparent he or she will not be able to raise the cumulative grade point average to the 2.0 required for graduation. This action may be taken by the student's academic dean in consultation with the chair of the student's major department and the student's advisor.

At the end of each quarter, deficiency points will be calculated by the registrar for all students on mandatory advising. Deficiency points are defined as the number of points a student would need in order to raise the cumulative point hour ratio to 2.0. A student with a point hour ratio greater than 2.0 is said to have no deficiency points. Deficiency points are calculated by subtracting the number of points earned from twice the number of credit hours attempted for the grades A, B, C, D, F, or X.

Students on mandatory advising will be advised in writing by their college or school of their deficiency points and the conditions they must meet to remain at the university.

Notice of dismissal from the university will be sent directly to the student by the dean of the college or school in which the student is registered.

A student who has been dismissed will not be permitted to enroll for any courses at the university for a period of one year, and until he or she has been reinstated by a college, school, or the University Division.

A student must submit a written request for reinstatement. Readmission is not automatic. A student may petition to waive the last three quarters of the dismissal period. Petition forms may be obtained from and submitted through the Office of Admissions. The petition is reviewed by the College Petitions Committee. A student whose petition is approved is continued on mandatory advising.

A student who is reinstated following an academic dismissal is subject to any special requirements which may be determined appropriate by the dean of the college in consultation with the faculty.

Exceptions to scholastic regulations may be petitioned to the University Undergraduate Student Petitions Council. Petition forms are available in most academic department offices. These forms are filed in the registrar's office.
General Education Requirements

University General Education requirements must be completed in order to graduate with a baccalaureate degree. The purpose of these general studies is to broaden students' knowledge and outlook on life and to increase their understanding of our cultural heritage.

Students must fulfill specific university General Education requirements in each of three areas—English composition; laboratory sciences; and social sciences and humanities. The specific requirements for each area, and the courses which can be used to meet each area's requirements, follow. See the program of study description of your intended major for exceptions to the General Education requirements.*

Area One—English Composition
Two courses, to be taken in sequence and completed by the end of the sophomore year: English 111 and 112.

Area Two—Laboratory Sciences
A three-course sequence in one science, to be chosen from:
- Biological Sciences 101, 102, and 103; honors sections only of 111, 112, and 114
- Chemistry 101, 102, and 103
- Geological Sciences 101, 102 (with corresponding laboratory units 104, 105), and 103; honors sections only of 111, 112, and 113
- Physics 121, 122, 123, 124, and 125 (with corresponding laboratory units 131, 132, 133, 134, and 135)
- University Honors 203 (This course may replace the third quarter of any of the above-listed sequences for General Education purposes only. It does not replace the third quarter of a sequence required in the major. Restricted to University Honors students.)

Area Three—Social Sciences and Humanities

Group A—Social Sciences
Group B—Humanities
Twenty-seven hours are required. Groups A and B each require a minimum of nine hours. You may select courses from more than one department and you may take from nine to eighteen hours in one group and the rest in another group.

Group A—Social Sciences
Nine hours minimum required.
- Anthropology 140, 141, and 142
- Economics 101, 201, 202, and 203
- Geography 101, 102, 103, 225, 242, and 271
- History 111, 112, 120, 121, 122, 131, 132, 142, 143, and 199
- Political Science 110, 112, 113, 122, 123, and 251
- Psychology 111 and 112
- Sociology 111, 112, 210, 212, and 221
- University Honors 202 (Restricted to University Honors students.)
- Urban Affairs 211

Group B—Humanities
Nine hours minimum required.
- Art and Art History 206, 207, 208, 209, 211, 212, 213, and 219
- Classics 100, 111, 112, 113, and 211
- Communication 101, 102, 111, and 141
- Comparative Literature 201, 202, 203, and 210
- English 190, 201, 202, 203, 204, 205, 210, 211, and 212
- Modern Language Humanities 111, 112, 113, 114, 115, 211, 212, 213, 214, 215, and 216
- Music 111, 112, 113, 114, 117, and 118
- Philosophy 111, 112, 113, 115, 123, and 124
- Religion 111, 112, 113, 114, 200, 202, 210, and 280
- Theatre 101, 131, 180, 203, 231, 232, 233, 360, and 361
- University Honors 201 (Restricted to University Honors students.)

Summary of General Education Requirements
Area One/English Composition—two courses
Area Two/Laboratory Sciences—a three-course sequence
Area Three/Social Sciences and Humanities—twenty-seven hours
Area Three A/Social Sciences—nine hours minimum
Area Three B/Humanities—nine hours minimum

*New General Education requirements are scheduled to go into effect fall 1987. Up-to-date information is available in the University Division and in the offices of the deans.
Profile

Accreditation and Memberships

Wright State is accredited by the North Central Association of Colleges and Schools. Also, programs in the College of Education and Human Services are approved by the Ohio State Board of Education and accredited by the National Council for Accreditation of Teacher Education. Our music programs are accredited by the National Association of Schools of Music, business programs by the American Assembly of Collegiate Schools of Business, art therapy by the American Art Therapy Association, geological sciences by the American Institute of Professional Geologists, Professional Psychology’s clinical psychology and internship programs by the American Psychological Association Committee on Accreditation, social work by the Council on Social Work Education, environmental health by the National Accrediting Council for Environmental Health Curricula of the National Environmental Health Association, medical technology by the Committee on Allied Health Education and Accreditation and the National Accrediting Agency for Clinical Laboratory Scientists, medicine by the Liaison Committee on Medical Education, the College of Science and Engineering’s systems engineering and computer engineering programs by the Accreditation Board for Engineering and Technology, and the School of Nursing by the National League for Nursing and the Ohio State Board of Nursing Education and Nurse Registration. In addition, the Bachelor of Science program in chemistry is certified by the American Chemical Society, and the Western Ohio Branch Campus is accredited by the North Central Association of Colleges and Schools at the associate degree-granting level.

We hold membership in numerous organizations, including the American Association of Colleges for Teacher Education, American Assembly of Collegiate Schools of Business, the Midwestern Association of Graduate Schools, the Council of Graduate Schools, the Ohio College Association, the Association of Urban Universities, the American Association of State Colleges and Universities, the American Council on Education, the American Association of Colleges, the American Association of Colleges of Nursing, and the Council of Baccalaureate and Higher Degree Programs of the National League for Nursing.

Wright State participates in many kinds of cooperative ventures with local colleges, universities, and institutions. Through the Southwestern Ohio Council for Higher Education, Wright State students may take courses at member institutions and also take advantage of their library facilities. The School of Medicine has cooperative arrangements with Central State and Miami Universities, and the School of Nursing offers its master’s program in cooperation with Miami University. Both of these schools work closely with many area hospitals. A graduate-level program in geology is offered in cooperation with Miami University and the University of Cincinnati. The Western Ohio Branch Campus offers programs and courses in conjunction with Lima Technical College and the Lima Branch Campus of The Ohio State University. Wright State’s telecommunications department works with the University Regional Broadcasting Corporation, a joint program of Wright State, Central State, and Miami Universities. In addition, the Sanders Judaic Studies Program, providing scholarship and teaching in the field of Judaic studies, is made possible through the cooperative effort of Wright State, Antioch College, United Theological Seminary, and the University of Dayton.
Business and Administration
The College of Business and Administration has as its primary objective the development of qualified business professionals. This objective is met by ensuring a knowledge of basic business functions, by providing the foundation for continuing self-development, by educating students to be aware of the businessperson’s responsibilities in the political, social, and economic order of society, and by increasing the student’s capacity for adjustment to the rapidly changing conditions of the business world.

The College of Business and Administration offers a broad curriculum leading to a Bachelor of Science in Business degree with majors in accountancy, business economics, finance, financial services, management, management science, and marketing.

Graduate study is available to qualified students through a program which leads to the Master of Business Administration degree. The program has been designed for persons holding baccalaureate degrees either in business administration or in other areas. Persons who are employed full time may complete a program on a part-time basis by taking courses offered in the evening. Both the master’s and bachelor’s degree programs are fully accredited by the American Assembly of Collegiate Schools of Business.

A second graduate program leading to a Master of Science degree is offered in social and applied economics. This program stresses the practical application of social science theory. The program includes an internship which integrates experience with a multidisciplinary instructional base. A third graduate program leading to a Master of Science degree is offered in logistics management. For information on the master’s degree programs, see the Graduate Catalog.

A chapter of Beta Gamma Sigma, the national scholastic honor society in the field of business and administration, was established at Wright State in 1976. In 1984, the Alpha Delta chapter of Omicron Delta Epsilon, an international honor society for economics scholars and students, was chartered at Wright State.

Admission

All students who seek a degree in business administration should apply to the director of admissions, Wright State University. When applying, students should indicate their preferred major within the college, if known. Business administration majors are required to complete the program of study which is current at the time of their admission to the College of Business and Administration. Specific requirements for admission to the college follow.
Admission from University Division and other WSU Colleges

The student seeking admission from the University Division or another college of Wright State must have at least thirty-six credit hours of academic credit, a 2.25 cumulative grade point average, and a grade of C or better in a math course at or above the level of college algebra (MTH 128 or 129). Students may initiate the transfer process by completing an Intrauniversity Transfer Form and submitting it to the office of their current major. Students must meet the program requirements current at the time they are admitted to the college.

Admission from other Universities and Colleges

Students from other universities and colleges must have at least thirty-six quarter hours of academic credit and a 2.25 cumulative grade point average.

Returning Students

A student who returns to Wright State University after an absence of four or more consecutive quarters may be granted admission to the college according to the requirements which are applied to transfer students from other universities and colleges. These students will be required to satisfy the program requirements which are current at the time of readmission to the college.

Transfer Credit

The college reserves the right to limit the number of transfer hours applied toward the degree. Credits earned in junior or community colleges will normally apply only to the requirements of the freshman and sophomore years. Credit may be accepted for work done at the 100-200 level in required courses offered by the College of Business and Administration. Course work corresponding to 100-400 level courses outside the college may be applied to the nonprofessional and General Education requirements.

The college may accept for credit a principles course at the 300 level if the student completes an advanced course in the same subject area with a grade of C or better. This will be considered a validation of the student's credit. This course work is counted toward the degree requirements and will not normally result in an additional number of hours to complete the program of study.

Transfer credit from nonregionally accredited institutions will not apply toward the degree. Students should consult with the academic adviser in the College of Business and Administration to determine which courses will apply toward the degree.

Degree Requirements

Candidates for the Bachelor of Science in Business degree must fulfill the university General Education requirements during the freshman and sophomore years. All students will take a basic core of business courses, regardless of their major, and in addition are expected to complete the sequence of required professional courses, professional electives, and nonprofessional electives as set forth in the appropriate program. Professional elective courses must be junior or senior level courses selected from offerings of the Departments of Accountancy, Economics, Finance, Insurance, and Real Estate; Management, and Marketing. Nonprofessional electives must be selected from departments of the university other than those in the College of Business and Administration. At least forty percent (but a maximum of sixty percent) of the work applied toward the degree must be outside the business college.

In order to take 300- or 400-level courses in the College of Business and Administration, a student must attain ninety quarter hours of academic credit prior to, or by the completion of, the academic quarter in which the student wishes to take the 300- or 400-level course(s).

The last forty-five hours of course work must be taken at Wright State University. All students must complete a total of 187 hours of acceptable academic work with at least a 2.0 cumulative average. In some cases a student may find it necessary to earn more than 187 credit hours to complete the requirements of the program under which he or she seeks to graduate.

Students wishing to pursue a double major within the College of Business and Administration must formally declare their intention to do so. To earn a double major, students must complete all minimum requirements for both programs of study.

Advising

Students are urged to plan their program of study with the help of a college adviser. Advisers are available by phone or appointment to answer questions, assist in program planning, or help with procedural and academic problems.

The advising office prepares a student handbook annually, which provides information about program requirements, university and college regulations, and various opportunities available to students majoring in business and administration. In addition, students receive a quarterly newsletter which includes information about upcoming events and activities, special course offerings, and program modifications.

Faculty members of the College of Business and Administration are available to discuss career opportunities and career planning.
professional elective courses, and to supervise internships and independent study projects. Students should contact the appropriate department to determine the faculty members who are available for advising.

Business Minor

Nonbusiness students may earn a minor in business in addition to their major program of study by completing the requirements for the business minor program. Students who register for the minor will complete forty-five hours of business coursework and six hours of mathematics to receive the designation of "Minor in Business" on their transcript upon graduation. In many cases, a student can use all fifty-one hours of course work to fulfill the elective requirements of his or her major program. The business minor has been designed to include all course prerequisites for the Master of Business Administration program. Thus, the student could earn the baccalaureate degree with the business minor in four years of successful full-time study and, in an additional year, complete M.B.A. degree requirements.

Courses required for the business minor follow:

- AIS 103 Introduction to Data Processing
- ACC 201, 202, 203 Accounting Concepts and Principles I, II, III
- EC 201, 202, 203 Principles of Economics
- QBA 201 Introduction to Statistical Analysis
- MTH 224 Calculus for Administrative, Life, and Social Sciences I
- MTH 226 Calculus for Administrative, Life, and Social Sciences II
- MGT 301, 302 Principles of Management and Introduction to Organizational Behavior
- MKT 301, 302 Principles of Marketing and Marketing Management
- FIN 301, 302 Business Finance I, II
- ADM 350 Business Law I

Students in the minor program are restricted from taking business courses other than those required by the program. Students who complete course work in data processing, mathematics, or statistics, other than those listed, may be permitted to count that course work toward the business minor, with permission. For more information, contact the undergraduate adviser in the College of Business and Administration.

Honors Program

The College of Business and Administration sponsors an honors program in order to allow students who have demonstrated outstanding academic ability and superior accomplishments to complete a program in the college which will encourage and recognize their distinguished efforts and abilities. Such students may earn an honors degree by completing the departmental major requirements, by maintaining a high academic record, and by successfully completing the college Honors Program. Students who are interested in applying to the program may contact the college's advising office for eligibility requirements and further details.

Graduation Requirements

All students will be required to satisfy the following minimum requirements for graduation:

1. Completion of 187 credit hours of acceptable academic work
2. Attainment of a 2.0 or better grade point average
3. Completion of all course requirements, as specified by the student's program of study
4. Completion of the last forty-five hours of coursework at Wright State
5. Completion of a minimum of thirty credit hours of upper division course work at Wright State

Seniors are advised to consult their academic adviser prior to the last quarter of study, to ensure that all requirements for graduation will be completed.

Required Courses for Majors in Business and Administration

An official list of major requirements will be mailed at the time of the student's admission to the college. Since this list represents a contract between the college and the student, it is important that the student meet with an adviser to review the requirements and fill out and sign the program of study form.

The program requirements listed on the following pages illustrate an ideal schedule for full-time students. Many individuals, especially part-time students, will be unable to follow the program as shown. These students should contact their academic advisers to plan their schedules.

Freshman Year

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>14-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>4</td>
</tr>
<tr>
<td>Science I</td>
<td>4</td>
</tr>
<tr>
<td>MTH 128 or 129</td>
<td>3-5</td>
</tr>
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<table>
<thead>
<tr>
<th>Second Quarter</th>
<th>14</th>
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<tbody>
<tr>
<td>ENG 112</td>
<td>4</td>
</tr>
<tr>
<td>Science II</td>
<td>4</td>
</tr>
<tr>
<td>MTH 224</td>
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<table>
<thead>
<tr>
<th>Third Quarter</th>
<th>19</th>
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<tbody>
<tr>
<td>MTH 226</td>
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<tr>
<td>Science III</td>
<td>4</td>
</tr>
<tr>
<td>Humanities*</td>
<td>8</td>
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</tbody>
</table>
Sophomore Year

Fourth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 201</td>
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<tr>
<td>QBA 201</td>
<td>3</td>
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<tr>
<td>EC 201</td>
<td>3</td>
</tr>
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Fifth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 202</td>
<td>3</td>
</tr>
<tr>
<td>Nonprofessional Elective</td>
<td>1-3</td>
</tr>
<tr>
<td>QBA 202</td>
<td>3</td>
</tr>
<tr>
<td>EC 203</td>
<td>3</td>
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Sixth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACC 203</td>
<td>3</td>
</tr>
<tr>
<td>Humanities or Social Science</td>
<td>4-7</td>
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<tr>
<td>Nonprofessional Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Degree Requirements—Accountancy

Bachelor of Science in Business Degree

The program in accountancy requires a minimum of 187 credit hours.

The following program represents the optimum schedule for a full-time student pursuing a four-year program. Many individuals, especially part-time students, will be unable to follow the program as shown. These students should contact their academic advisers to plan their schedules.

Junior Year

Seventh Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 301</td>
<td>3</td>
</tr>
<tr>
<td>MGT 301</td>
<td>3</td>
</tr>
<tr>
<td>AIS 300</td>
<td>3</td>
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Eighth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 302</td>
<td>3</td>
</tr>
<tr>
<td>MKT 301</td>
<td>3</td>
</tr>
<tr>
<td>QBA 303</td>
<td>3</td>
</tr>
</tbody>
</table>

Ninth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 302</td>
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<tr>
<td>MGT 303</td>
<td>3</td>
</tr>
<tr>
<td>MGT 304</td>
<td>3</td>
</tr>
</tbody>
</table>

Senior Year*

Tenth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 303</td>
<td>3</td>
</tr>
<tr>
<td>ACC 411</td>
<td>3</td>
</tr>
<tr>
<td>ACC 421</td>
<td>3</td>
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</tbody>
</table>

Eleventh Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Nonprofessional Elective</td>
<td>6</td>
</tr>
</tbody>
</table>

Twelfth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 482</td>
<td>3</td>
</tr>
<tr>
<td>MGT 481</td>
<td>4</td>
</tr>
</tbody>
</table>

*The accountancy courses listed for the senior year represent only one schedule of offerings. Other schedules are available which may better fit the student’s needs. Contact an academic adviser for additional information on alternative schedules for the senior year.

Administration

See Management

Business Education

See College of Education and Human Services
The dimensions of economics range from the practical concerns of how a business firm strives for efficiency to the visionary questions concerning limits imposed by the laws of nature on the earth’s population and natural resources. Economics focuses on efforts to improve our welfare, by understanding individual decision making in the face of relative scarcity and by studying the complex relationships between the production, consumption, and distribution of material goods within systems of markets, governments, and supranational institutions.

Students of economics develop the ability to reason logically, integrate broad perspectives, measure empirically, manipulate in the abstract, and imagine grandly. These skills and talents serve well in preparing students for careers in business, law, and government and for graduate programs in economics, business, and law. Graduates of our program are employed as professional economists in such diverse areas as urban economics, manpower and training analysis, business forecasting, school finance consulting, health and delivery systems evaluation, budget analysis, market consulting, government planning, and statistical analysis. Some of our graduates continue their education in our master’s program in social and applied economics.

The program outlined here is designed to give our students both the background that will broaden and maintain their future options and the specific skills necessary to use and apply economic ideas. Departmental undergraduate advisers are available to any student who may need advice about formulating and attaining career goals, as well as making decisions concerning elective courses.

Students with a major in business economics must take a minimum of thirty-three credit hours in economics in addition to the basic business core (which includes EC 201, 202, 203) required of all candidates for the Bachelor of Science in Business degree.

Degree Requirements—Business Economics

Bachelor of Science in Business Degree

The program in economics requires a minimum of 187 credit hours.
### Degree Requirements—Finance
#### Bachelor of Science in Business Degree

The major in finance requires a minimum of 187 credit hours.

The following program represents an optimum schedule for a full-time student pursuing a four-year program with a major in finance. Many individuals, especially part-time students, will be unable to follow the program as shown. These students should contact their academic adviser to plan their schedules.

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Seventh Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 301</td>
<td>QBA 303</td>
</tr>
<tr>
<td>MGT 301</td>
<td>AIS 300</td>
</tr>
<tr>
<td>MKT 301</td>
<td>ACC 304</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eighth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 302</td>
</tr>
<tr>
<td>MGT 302</td>
</tr>
<tr>
<td>MKT 302</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ninth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 303</td>
</tr>
<tr>
<td>MGT 303</td>
</tr>
<tr>
<td>EC 301</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenth Quarter</td>
</tr>
<tr>
<td>Fin 401</td>
</tr>
<tr>
<td>Fin Elective*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eleventh Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 420</td>
</tr>
<tr>
<td>MGT 482</td>
</tr>
<tr>
<td>Professional</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Twelfth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 411</td>
</tr>
<tr>
<td>Fin Elective*</td>
</tr>
<tr>
<td>MGT 481</td>
</tr>
</tbody>
</table>

*Students may elect to take the sequence of ACC 321 and 322 in place of two finance electives.

### Degree Requirements—
#### Financial Services

Bachelor of Science in Business Degree

The major in financial services requires a minimum of 187 credit hours.

The following represents an optimum schedule for a full-time student pursuing a four-year program in financial services. Many individuals, especially part-time students, will be unable to follow the program as shown. These students should contact their academic adviser to plan their schedules.

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Seventh Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 301</td>
<td></td>
</tr>
<tr>
<td>Fin 351</td>
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</tr>
<tr>
<td>Fin 331</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Eighth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 302</td>
</tr>
<tr>
<td>Fin 305</td>
</tr>
<tr>
<td>MGT 302</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ninth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 303</td>
</tr>
<tr>
<td>QBA 303</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenth Quarter</td>
</tr>
<tr>
<td>Fin 401</td>
</tr>
<tr>
<td>Fin 462</td>
</tr>
<tr>
<td>Financial</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eleventh Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 411</td>
</tr>
<tr>
<td>Fin 411</td>
</tr>
<tr>
<td>Professional</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Twelfth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin 463</td>
</tr>
<tr>
<td>MGT 481</td>
</tr>
<tr>
<td>Professional or</td>
</tr>
<tr>
<td>Nonprofessional</td>
</tr>
<tr>
<td>Elective</td>
</tr>
</tbody>
</table>

### Insurance

See Finance, Insurance, and Real Estate.

### Management

**Professors** Kirk, Lanford, Murray, Stickney, Von der Embse

**Associate Professors** Cooper, Daily (chair), Hartmann, Knapke (WOBC), McGrath, Waggener (Emeritus)

**Assistant Professors** Evans, Showell, Wagley

The management major is designed to provide a background in all facets of organization and management. All management majors are encouraged to take PSY 111 and 112 during the freshman or sophomore year. The student's combination of elective courses can be determined in consultation with his or her faculty adviser.
Degree Requirements—Management

Bachelor of Science in Business Degree

The program in management requires a minimum of 187 credit hours.

The following program represents the optimum schedule for a full-time student pursuing a four-year program. Many individuals, especially part-time students, will be unable to follow the program as shown. These students should contact their academic adviser to plan their schedules.

Junior Year

<table>
<thead>
<tr>
<th>Seventh Quarter</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 301</td>
<td>3</td>
</tr>
<tr>
<td>MGT 301</td>
<td>3</td>
</tr>
<tr>
<td>AIS 300</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eighth Quarter</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 302</td>
<td>3</td>
</tr>
<tr>
<td>MGT 302</td>
<td>3</td>
</tr>
<tr>
<td>MKT 301</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ninth Quarter</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonprofessional Elective</td>
<td>3</td>
</tr>
<tr>
<td>MGT 303</td>
<td>3</td>
</tr>
<tr>
<td>EC 301</td>
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</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenth Quarter</td>
<td>15</td>
</tr>
<tr>
<td>Nonprofessional Elective</td>
<td>3</td>
</tr>
<tr>
<td>MGT 421</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Eleventh Quarter</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonprofessional Elective</td>
<td>3</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Twelfth Quarter</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 481</td>
<td>4</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>6</td>
</tr>
<tr>
<td>MGT 482</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentrations

Students will select an area of concentration in general management, personnel and industrial relations, production management, or materials management. Course requirements for each concentration follow.

General Management

Select four courses from MGT 422, 423, 431, 432, 433, 434.

Personnel and Industrial Relations

MGT 422 and 423 are required. Students may select three courses from COM 441, 443, 445; MGT 415, 434C, D, F; EC 351, 352, 354; PSY 306, 307, 309, 331, 351; SOC 350, 440, 441; ADM 480.

Production Management

Six courses are required, including at least three of the following: MGT 431, 432, 433, and 434B. To complete the total of six courses, select two or three from EC 401, 454; COM 445, 447; MKT 471; PSY 306; QBA 320.

Materials Management

Required courses are MGT 432, 433, 434G, and MKT 431. In addition, students select two courses from ADM 351, 352; EC 401; MGT 431, 434B; MKT 471; QBA 320.

Management Science

Professors: Cleary, Cox

Associate Professors: Constable, Daily (chair), Demmy, Lai

Assistant Professors: Boggs, Denison, Hobbs, Yen

The management science major provides training in quantitative methods that have proven useful in solving business problems. The focus of the course work is the development and application of quantitative techniques to assist the modern manager in the decision-making process. Concentration electives provide courses in operations management, business statistics, operations research, and computer applications. Operations management is primarily concerned with the day-to-day operations of the firm, including inventory control, quality control, and scheduling. Business statistics is concerned with the application of statistical concepts and techniques in analyzing data to draw inferences for control and planning purposes. Operations research uses mathematical methods to solve a variety of problems such as resource allocation, product mix, and length of waiting lines. Computer applications include courses in information systems design and simulation.
Degree Requirements—Management Science
Bachelor of Science in Business Degree

Freshman Year

First Quarter 
ENG 111 4 ADM 101 3 Science I 4 MTH 128 or 129 3-5
Second Quarter 
ENG 112 4 AIS 103 3 Science II 4 MTH 224 3
Third Quarter 
MTH 226 3 Humanities* 4 Science III 4 Humanities or Social Science* 8

Sophomore Year

Fourth Quarter 
ACC 201 3 QBA 201 3 CS 141 4 Humanities or Social Science* 4 EC 201 3
LCS 210 1
Fifth Quarter 
ACC 202 3 QBA 202 3 CS 142 4 COM 203 3 EC 202 3
Sixth Quarter 
ACC 203 3 EC 203 3 Humanities* 4 CS 205 3 Social Science 4 ENG 330 3

Junior Year

Seventh Quarter 
AIS 300 3 QBA 303 3 MKT 301 3 ACC 300 3 MGT 301 3
Eighth Quarter 
FIN 301 3 QBA 304 3 MKT 302 3 Concentration 3 MGT 302 3 Elective 3
Ninth Quarter 
FIN 302 3 ADM 350 3 MGT 303 3 Concentration 3 EC 301 3 Elective 3

Senior Year

Tenth Quarter 
MGT 411 3 MGT 412 or 421 3
Nonprofessional Concentration
Elective 1-3 Electives 6
Eleventh Quarter 
QBA 491 3 MGT 482 3
Concentration Nonprofessional
Elective 3 Elective 3
Twelfth Quarter 
MGT 481 4 Professional
Concentration Electives 9
Elective 3

*Courses must be selected from those approved for General Education requirements. See the chapter on Academic Standards in this catalog. Credit hours may vary depending on the courses selected. Students are required to complete at least three courses in the humanities and additional course work in the social sciences or humanities for an overall total of at least eighteen credit hours.

Major Requirements

All management science majors must:

1. Take the following courses:
   - CS 141, 142; ACC 300, QBA 491; MGT 411, and 412 or 421
2. Select one from each of the following concentrations plus at least one additional course from any of these concentrations:
   - Operations Management MGT 431, 432
   - Business Statistics QBA 430, 431
   - Operations Research QBA 440, 441
   - Computer Applications QBA 320, 321, 452
3. Take at least one of the following courses:
   - MGT 434B; MKT 431; EC 409, 412

Marketing

Professors Brown, Carusone, Kegerreis, Khera, Venkatesan
Associate Professors Anderson (chair), Dovel, Wise
Assistant Professor Lancaster

The student who majors in marketing receives a thorough foundation in the concepts and techniques necessary to effectively manage a customer-oriented business. In addition to survey courses in Principles of Marketing (MKT 301) and Marketing Management (MKT 302), which are part of the professional business core, a marketing major completes required study in Consumer Behavior (MKT 303), Personal Selling (MKT 336), Product Management (MKT 416), Price Management (MKT 418),
Advertising (MKT 441), a course in distribution—either Logistics (MKT 431), Retailing (MKT 461), or Channels (MKT 480D), and the capstone marketing policy course (MKT 492).

Marketing careers are far-reaching and diverse as they touch on all components of the marketing mix—product, promotion, pricing, and channels of distribution. In turn, each of these functional areas also offers dozens of specific job opportunities. For example, the promotional area includes potential employment in advertising, public relations, personal selling, and merchandising. Moreover, a single area, such as advertising, can offer more than two dozen special career orientations.

Other major employment tracks include retailing, marketing research, product management, personal selling, and strategic planning. Your faculty adviser can discuss your marketing career plans with you.

Degree Requirements—Marketing
Bachelor of Science in Business Degree

The program in marketing requires a minimum of 187 credit hours.

The following program represents the optimum junior- and senior-year schedule for a full-time student pursuing a four-year program. See the section on Required Courses for business and administration majors for the freshman- and sophomore-year schedule. Many individuals, especially part-time students, will be unable to follow the program as shown. These students should contact their academic advisers to plan their schedules.

### Junior Year

#### Seventh Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>MGT 301</td>
<td>3</td>
</tr>
<tr>
<td>MKT 301</td>
<td>3</td>
</tr>
<tr>
<td>QBA 303</td>
<td></td>
</tr>
<tr>
<td>AIS 300</td>
<td></td>
</tr>
<tr>
<td>MGT 302</td>
<td>3</td>
</tr>
<tr>
<td>MKT 302</td>
<td>3</td>
</tr>
<tr>
<td>EC 301</td>
<td>3</td>
</tr>
<tr>
<td>Nonprofessional Elective</td>
<td>3</td>
</tr>
<tr>
<td>ADM 350</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Eighth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 302</td>
<td>3</td>
</tr>
<tr>
<td>MGT 302</td>
<td>3</td>
</tr>
<tr>
<td>MKT 302</td>
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<tr>
<td>QBA 304</td>
<td></td>
</tr>
<tr>
<td>MKT 336</td>
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</tr>
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<td>Nonprofessional Elective</td>
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</tr>
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<td>Elective</td>
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</table>

#### Ninth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT Elective</td>
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<td>MGT 303</td>
<td>3</td>
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<td>MKT 303</td>
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<td>EC 301</td>
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<td>Nonprofessional Elective</td>
<td>3</td>
</tr>
<tr>
<td>ADM 350</td>
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</table>

### Senior Year

#### Tenth Quarter

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MKT 416</td>
<td>3</td>
</tr>
<tr>
<td>MKT 441</td>
<td>3</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>6</td>
</tr>
<tr>
<td>Nonprofessional Elective</td>
<td>3</td>
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#### Eleventh Quarter

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>MKT 418</td>
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<tr>
<td>MKT 431, 461 or 480D</td>
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<td>Nonprofessional Elective</td>
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#### Twelfth Quarter

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<th>Course</th>
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<td>MKT 492</td>
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<td>MGT 481</td>
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<td>MKT Elective</td>
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<tr>
<td>Professional Elective</td>
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</tr>
<tr>
<td>Nonprofessional Elective</td>
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Real Estate

See Finance, Insurance, and Real Estate
Education and Human Services
Wright State University recognizes the preparation of teachers, educational leaders, and professionals in human services as a primary function. The College of Education and Human Services assumes responsibility for furthering the objectives of the university in these areas of concern. A variety of programs is offered by the college through its Divisions of Teacher Education, Educational Leadership, Human Services, Health, Physical Education, and Recreation; and Library and Communication Science. Both undergraduate and graduate programs leading to certification by the Ohio Department of Education in primary, elementary, special education, and secondary school teaching fields are offered within the Division of Teacher Education. The Divisions of Educational Leadership and Human Services are concerned with programs preparing both certified and noncertified leaders for public and private schools and for community agencies. These leaders include public school principals, curriculum supervisors, central office administrative specialists, school psychologists, school guidance counselors, personnel counselors, and rehabilitation specialists.

The Bachelor of Science in Education degree and the Bachelor of Science degree with a major in rehabilitation education are offered. Graduate degrees include the Master of Arts, Master of Art Therapy, Master of Education, Master of Rehabilitation Counseling, and Master of Science.

Degree programs include General Education requirements, an intensive study of an academic or a specialized professional area, and a professional component that integrates theoretical considerations with clinically based practicum experiences.

In addition to regular degree programs, the College of Education and Human Services offers both credit and noncredit special courses and workshops for community educational personnel. Throughout its history, the college has maintained a close working relationship with the public schools of the area. Cooperative efforts through the teacher education laboratory centers facilitate inservice and preservice teacher education by providing a variety of theoretical and clinical experiences for students. Frequent involvement of the College of Education and Human Services faculty in the schools of the area and the advice and planning assistance of public school personnel serve to improve both the teacher education programs and the programs of the schools of the community.

The College of Education and Human Services meets the certification standards of and has been approved by the Ohio State Board of Education and is a member of the American Association of Colleges for Teacher Education. The college is accredited by the National Council for Accreditation of Teacher Education.
Undergraduate Programs

The College of Education and Human Services offers four-year curricula leading to the Bachelor of Science in Education degree and Ohio teacher certification in the following fields. Second teaching fields must be coupled with a major teaching field.

The elementary and secondary programs have been revised to meet the State of Ohio Standards for Colleges or Universities preparing teachers. One of the requirements mandated by these standards is the completion of 300 clinical/field experience hours prior to student teaching. Students can anticipate spending five full days of prequarter participation during Phase I (typically the sophomore year) and an additional half day per week per quarter for a three-quarter sequence. In Phase II (typically the junior year), one day per week participation for three quarters is required. These requirements should be taken into account when scheduling other courses.

Upon acceptance into the College of Education and Human Services, each student should meet with his or her adviser to determine specific program changes which may not be reflected in this catalog.

Elementary—Grades 1-8
See the section on Elementary Education for concentrations.

Special Fields—Grades K-12
Art Education
Educational Media
Music Education (see Music, College of Liberal Arts)
Physical Education

Secondary—Grades 7-12
Major Teaching Fields
Biological Sciences
Business
Comprehensive with Shorthand
Comprehensive without Shorthand
Chemistry
Earth Science
English

Second Teaching Fields
Art Education
Biological Sciences
Chemistry
Earth Science
Economics
Educational Media
English
General Science
Geography
Health Education
History
Latin
Mathematics
Modern Languages
Physical Education
Physics
Political Science
Sociology
Special Education
Developmentally Handicapped
Moderately, Severely, and Profoundly Retarded
Specific Learning Disabilities

Rehabilitation Education
The College of Education and Human Services also offers a four-year curriculum leading to a Bachelor of Science degree with a major in rehabilitation education. This program prepares students to work with the physically mentally disabled and disadvantaged, but does not include teacher certification. Students may choose one of two major concentrations: generalist or mental health.

Validation of Standard Teaching Certificates
Curricula are available to validate standard teaching certificates in the following areas.

Educational Media (Elementary School)
The holder of a standard elementary teacher’s certificate may have that certificate validated for teaching educational media in the elementary school upon the completion of the educational media concentration.

Kindergarten
The holder of a standard elementary teacher’s certificate may have that certificate validated for teaching kindergarten by completing the early childhood education concentration.

MSPR
A provisional teacher’s certificate to teach moderately, severely, and profoundly retarded (MSPR) individuals will be issued to a holder of a bachelor’s degree who satisfactorily completes the following courses:

ED 441, 451, 452, 302, 453, and 459 (ED 403 or 404 is a strongly encouraged elective); ED 419 or 458, Supervised Teaching in a Setting for Multiply Handicapped Clients.
MSPR Validation for Special Teaching Fields

Persons holding teaching certificates in special fields such as home economics, physical education, art education, and music education can validate these certificates for teaching moderately, severely, and profoundly retarded individuals in these fields by taking ED 302, 451, and 453.

Orthopedically Handicapped

A person who holds a standard special education certificate may have that certificate validated for teaching orthopedically handicapped by completing the special education concentration, ED 452 and 458, in an appropriate setting. (See a special education adviser for assistance.)

Physical Education (Elementary School)

The holder of a standard elementary teacher's certificate may have that certificate validated for teaching physical education in the elementary school upon the completion of the elementary physical education concentration.

Qualified Mental Retardation Professional (QMRP)

Professionals who hold licenses or certificates in fields other than teaching, such as rehabilitation, psychology, speech pathology, physical therapy, occupational therapy, and nursing, may receive a QMRP certificate from the Ohio Department of Mental Retardation by taking ED 451, 453 or 445; 302 or 459.

Reading

The holder of a standard elementary or secondary teacher's certificate may have that certificate validated for teaching reading upon the completion of the reading concentration.

Visual Arts

The holder of a standard elementary teacher's certificate may have that certificate validated for teaching visual arts upon the completion of the visual arts concentration.

Education Honors Program

Outstanding students enrolled in programs in the Division of Teacher Education have an opportunity to complete the University Honors Program or an honors program in education. This program provides students expanded opportunities for creativity, self-direction, and excellence through special honors courses and an extended period of independent study.

Junior- or senior-level students enrolled in the College of Education and Human Services are eligible for the honors program if they have maintained a 3.0 overall cumulative grade point average, a 3.0 cumulative average in professional education, and have been recommended by a faculty member from the program area in which they plan to work.

Students interested in pursuing an honors program should consult an education adviser.

Admission and Retention Standards/Advising

The admission and retention policy and practices of the College of Education and Human Services are based upon the following principle, which is supported by the Ohio Laws and Regulations of the State Board of Education and the National Council for Accreditation of Teacher Education.

"Because there are skills, understandings, and personal characteristics unique to teaching, students seeking admission to programs in teacher education must meet requirements in addition to those generally prescribed for enrollment in the university. While academic performance is a major determinant of effective teaching, it is not the only one. Colleges of education have the right and obligation to consider personal factors as well as academic achievement as a basis for admission and retention of a student in its professional education programs."

Admission

Admission criteria are currently under review by the college. See an academic adviser in the college for current admissions requirements.

Students are admitted to the College of Education and Human Services after they have completed twenty-four credit hours and have attained a 2.25 grade point average. For students in Teacher Education, subsequent admission to the professional education course sequence (Phase I) requires also the completion of PSY 111 and ENG 111 and 112. Students in Teacher Education are required to attend an orientation meeting and to pass a test for basic skills competency.

Transfer Students

Students transferring from other institutions or from other colleges of Wright State University must meet the same standards for admission to the College of Education and Human Services detailed above, including the 2.25 grade point average and the completion of twenty-four credit hours (or equivalent) of college credit.
Retention

In order to increase the likelihood of the student's success, the professional degree program requires that certain criteria be met at various stages which lead to recommendation for certification and graduation. These criteria reflect requisite academic standards and effective performance of professional responsibilities which include the ability to provide for students' safety; effectively communicate with students orally and in writing; provide a stable, supportive environment which will facilitate student growth; and manage the instructional program for individuals and for small and large groups.

Faculty members, on the basis of their knowledge of a student and their professional observations, evaluate each student's progress in meeting these criteria and decide on retention and the recommendation for certification.

Advising

Upon admission to the College of Education and Human Services, each student is assigned an adviser. Students are expected to have an initial conference with their advisers to review the academic program. Students are strongly encouraged to see their advisers whenever they have questions concerning their programs, specific courses or course sequences, or their professional goals. Because of the sequential character of many courses and the prerequisites needed in both the professional and academic components of education degree programs, students are strongly urged to consult an adviser before registering. Any deviation from the specified curriculum should be discussed in detail with the adviser before it is undertaken. An undergraduate education guidebook is provided for each student. This book should be studied carefully and kept with all academic records.

Degree Requirements

The Bachelor of Science in Education degree is earned by College of Education and Human Services students completing teacher preparatory programs. It is granted only to students qualifying for a teaching certificate in Ohio. The program leading to the Bachelor of Science degree with a major in rehabilitation education prepares students to work with the disabled and disadvantaged, but does not lead to a teaching certificate.

General Degree Requirements

1. Completion of a minimum of 192 credit hours (which may include six hours of college service physical education).
2. Fulfillment of university General Education requirements.
3. An overall cumulative grade point average of 2.25 or higher.*
4. Successful completion of competency tests.
5. Satisfactory completion of all required professional laboratory experiences.

* A minimum grade point average of 2.5 is being considered. See an adviser in the college for the current required grade point average.

Specific Requirements

Elementary Education

(preparation for teaching in elementary grades)

1. General requirements listed previously.
2. Of the 192 credit hours required for graduation, a minimum of forty-five quarter hours in professional education.
3. Completion of prescribed pattern of courses including a minimum of one approved area of concentration (see program descriptions on subsequent pages).

Special Fields

(preparation to teach special subjects in grades K-12)

1. General requirements listed previously.
2. Of the 192 hours required for graduation, a minimum of thirty-two hours in professional education.
3. For specific degree requirements in art education, educational media, physical education, and a description of certification requirements in special education, see the program descriptions on subsequent pages. For specific degree requirements in music education, see Music, College of Liberal Arts.

Secondary Education

(preparation to teach academic subjects in grades 7-12)

1. General requirements listed previously.
2. Of the 192 credit hours required for graduation, a minimum of thirty-two hours in professional education.
3. Completion of appropriate speech and mathematics requirements.
4. Fulfillment of requirements established in one or more major teaching fields.

A student may have a major and one or more second teaching fields, two majors, or a comprehensive field. The student is strongly advised to prepare
in at least two teaching fields or a comprehensive field. A student who has taken the curriculum and materials course in the major field is not required to take a comparable course in other fields but may do so. If the two fields are unrelated, a second curriculum and materials course may be required. The College of Education and Human Services considers the minimum requirements for a second field inadequate for effective teaching except on an emergency basis unless supported by a closely related field. Therefore, a student should choose closely related supporting fields or plan to take more than the minimum work in the second field.

Rehabilitation Education
(preparation for work with disabled and disadvantaged individuals)
1. General requirements listed above.
2. Completion of prescribed pattern of courses.
   This program does not include teacher certification.

Recommendation for Certification
Every teacher in Ohio public schools is required to have a certificate covering the field(s) in which he or she is teaching. This certificate is issued by the Ohio Department of Education upon the recommendation of the College of Education and Human Services. Students may apply for certification in the College of Education and Human Services Office of Student Services during the last quarter of their professional undergraduate programs.

Certification of Students from Other Colleges within the University
Students who receive degrees from other colleges within the university may also wish to obtain teaching certificates. They will be recommended for certification only upon satisfactory completion of all the requirements of the College of Education and Human Services. These include admission, selective retention, the major teaching field and related requirements, the preprofessional and professional courses included in the secondary education programs listed on subsequent pages, and the minimum of 192 credit hours. At the beginning of the sophomore year, students from other colleges who are seeking certification should review their programs with a teacher certification adviser and make application to the certification program.

Certification for Holders of Nonprofessional Degrees
Students who are graduates of other accredited colleges or universities may be recommended for certification upon satisfactory completion of the general, major, and professional courses required for the teaching field(s) in which they seek certification and successful completion of competency tests. Certification candidates are urged to have their records evaluated and their programs planned by a teacher certification adviser upon application to the college.

Certification for School Nurses
The requirements for a provisional school nurse’s certificate are a bachelor’s degree from an approved institution, a current license as a registered nurse in the state of Ohio, and successful completion of the prescribed program of thirty-five to thirty-eight hours of professional education. Registered nurses who do not hold a bachelor’s degree may complete degree and certification requirements concurrently.

School Nursing Certification
Required Courses
- HPR 330 or NUR 413 4-10
- ED 211, 212, 213, 214, 215, 217 11
- HPR 440 4
- HPR 419 12-15

Retraining Programs
Holders of standard Ohio secondary or special teaching certificates may qualify for the retraining elementary provisional certificate. The retraining certificate is valid for four years and may be converted upon its termination to a standard provisional elementary certificate with the completion of specified additional course work in areas required for elementary certification.

Conversion from Secondary to Elementary Certification
Required Courses
- ED 440 3
- ED 315, 316, 317 9
- ED 437 (Prerequisite: MTH 343) 3
- ED 403 3
Art Education

Upon graduation, the art education major is certified to teach art from the kindergarten level through grade twelve. Philosophy and methodology courses and numerous studio/craft courses help prepare the student for teaching at all levels. Student teaching in art and additional clinical situations are included in the program. Graduate courses are also offered in art education.

Degree Requirements—Art Education

Bachelor of Science in Education Degree

Professional Education Requirements 46-48

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223
14

Phase II*
ED 327, 403 or 404, 432, 464; AED 438;
ED 321, 322, 323
16

Phase III*
ED 422, 440, 429
16-18

Related Requirements 10

PSY 111 (General Education, Area Three A—one course)
4

MTH 127 or 304**
3

COM 101
3

Art Education Major Requirements 85

AED 214, 224, 423, 431, 432, 441
22

AT 444
3

ART 206, 207, 208, 209, 228, 237, 247, 248, 269
36

Art History
8

Electives chosen from AED 225, 424, 425, 426; ART 229, 238, 249, 258, 268, 267, 278, 279
16

*May be waived with a score of fourteen or better on the math section of the ACT.

Biological Sciences Education

The biological sciences education program prepares students to teach biology, chemistry, and general science. The concentration in biology provides greater depth in that area by encompassing all the departmental core courses, including cell biology, genetics, microbiology, developmental biology, animal biology, and plant biology. The program also includes basic and supporting courses in chemistry and physics, related course work in mathematics and/or other areas of science, and the professional education courses required of all candidates for secondary school certification.

Degree Requirements—Biological Sciences Education

Bachelor of Science in Education Degree

Professional Education Requirements 45-47

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223
14

Phase II*
ED 327, 404, 432, 464, 431, 321, 322, 323
15

Phase III*
ED 422, 440, 429
16-18

Related Requirements 13

PSY 111 (General Education, Area Three A—one course)
4

MTH 127 or 304**
3

COM 101, 102
6
Biology Concentration Requirements 101.5

BIO 111, 112, 114 12
BIO 202, 203, or 204 10
BIO 205 or 206, 302 10
BIO 303 or 305 or 306 5
BIO 307 or 402 6
CHM 121, 122, 141 15
CHM 211/215, 212/216, 213/217 18
PHY 111/101, 112/102, 113/103 13.5
GL 101/104, 102/105, 103 12

Additional General Education Requirements 24

Area One 8
Area Three A 8
Area Three B 4
Area Three A or B 4

Electives 7-9

Total (minimum requirement) 192

*Field and clinical experiences required.
*May be waived with a score of nineteen or better on the math section of the ACT.

Biological Sciences Education as a Second Teaching Field

Thirty-two credit hours in biology are required for biological sciences as a second teaching field. Required courses are BIO 111, 112, 114, 202, 302, and two of the following: BIO 204, 205, 206, 303, and CHM 121, 122, 141.

Business Education

Business education offers two majors that lead to the Bachelor of Science in Education degree and state certification. The comprehensive with shorthand major meets high school certification requirements in comprehensive business education and shorthand, and if the specified work experience is demonstrated and ED 407 and 408 are completed, meets vocational certification requirements in business education, except data processing. The comprehensive with shorthand major leads to certification in all areas of secondary business education, including shorthand, typing, bookkeeping, general business, business law, economics, salesmanship, and other commonly taught business education subjects. The comprehensive without shorthand major meets high school certification requirements in comprehensive business education without shorthand, and if the specified work experience is demonstrated and ED 407 and 408 are completed, meets vocational certification requirements in business education, except for shorthand and data processing.

Degree Requirements—Business Education

Comprehensive with Shorthand

Bachelor of Science in Education Degree

Professional Education Requirements 53-55

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*
ED 327, 404, 432, 464, 433, 434, 435, 321, 322, 323 23

Phase III*
ED 422, 440, 429 16-18

Related Requirements 10

PSY 111 (General Education, Area Three A—one course) 4
COM 101, 102 6

Comprehensive Business Major Requirements 73

ACC 201, 202, 203 9
ADM 101, 350; AIS 103 9
EC 201, 202, 203 (General Education, Area Three A) 9

ENG 330 3
MTH 127 3
MGT 301 3
MKT 301, 302 6
MKT 336, 441, 461 (choose one) 3
OA 202, 203, 211, 212, 213, 301, 305, 411 25

Business or business education elective 3

Additional General Education Requirements 24

Area One 8
Area Two 12
Area Three B 4

Electives 33-35

Second field suggested

Total (minimum requirement) 193

*Field and clinical experiences required.

This major could also lead to certification in comprehensive vocational business education with data processing if AIS 103, CS 141 and 142, LCS 485, 486, and 487 are completed.
Degree Requirements—
Business Education
Comprehensive without Shorthand
Bachelor of Science in Education Degree

Professional Education Requirements 47-49

Phase I*
ED 211, 212, 213, 214, 215, 216, 217,
221, 222, 223
14

Phase II*
ED 327, 404, 432, 464, 433, 434,
321, 322, 323
17

Phase III*
ED 422, 440, 429
16-18

Related Requirements 10

PSY 111 (General Education,
Area Three A—one course)
4

COM 101, 102
6

Basic Business Major Requirements 72

ACC 201, 202, 203
9

ADM 101, 350; AIS 103
9

EC 201, 202, 203 (General Education,
Area Three A)
9

ENG 330
3

MKT 301, 302
6

MKT 336, 441, 461 (choose two)
6

MTH 127
3

MGT 301
3

OA 211, 212, 213, 305, 411
16

Business or business education electives
8

Additional General Education Requirements 24

Area One
8

Area Two
12

Area Three B
4

Electives
35-37

Second field suggested

Total (minimum requirement) 192

*Field and clinical experiences required.

This major could also lead to certification in vocational business education with data processing if AIS 103, CS 141 and 142, LCS 485, 486, and 487 are completed.

Chemistry Education

The chemistry education program prepares students to teach chemistry and general science in the secondary school. The concentration provides a strong preparation in chemistry with courses in general, organic, analytical, and physical chemistry. The program includes basic and supporting courses in biology, physics, and earth science and the professional education courses required of all candidates for secondary school certification. Students are strongly advised to complete at least one second teaching field in biological sciences or earth science or physics in addition to the basic program in chemistry.

Degree Requirements—
Chemistry Education

Bachelor of Science in Education Degree

Professional Education Requirements 45-47

Phase I*
ED 211, 212, 213, 214, 215, 216, 217,
221, 222, 223
14

Phase II*
ED 321, 322, 323, 327, 404, 432, 464, 431
15

Phase III*
ED 422, 440, 429
16-18

Related Requirements 10

PSY 111 (General Education,
Area Three A—one course)
4

COM 101, 102
6

Chemistry Concentration Requirements 92-96

CHM 121, 122, 141
15

CHM 211/215, 212/216, 213/217
18

CHM 451, 452
6

CHM 453 or 312/314
3-7.5

BIO 111, 112, 114
12

GL 101/104, 102/105
8

PHY 240/200, 241/201, 242/202
15

MTH 132, 133, 231
15

Additional General Education Requirements 24

Area One
8

Area Three A
8

Area Three B
4

Area Three A or B
4

Electives 15-21

Total (minimum requirement) 192

*Field and clinical experiences required.

Chemistry Education as a Second Teaching Field

Thirty-three credit hours are required for chemistry as a second teaching field. Required courses are CHM 121, 122, 141, and 211/215, 212/216, 213/217.
Earth Science Education

The earth science program prepares students to teach earth science and general science in the secondary school. The concentration in earth science provides intensive preparation in that area with courses in mineralogy, structural geology, and invertebrate paleontology. The program also includes basic and supporting courses in biology, chemistry, and physics, related course work in geography, and the professional education courses required of all candidates for secondary school certification. Students are strongly advised to complete at least one second teaching field in biology or chemistry or physics in addition to the basic program in earth science.

Degree Requirements—Earth Science Education

Bachelor of Science in Education Degree

Professional Education Requirements 45-47

Phase I*

ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*

ED 327, 404, 432, 464, 431, 321, 322, 323 15

Phase III*

ED 422, 440, 429 16-18

Related Requirements 13

PSY 111 (General Education, Area Three A—one course) 4
MTH 127 or 304** 3
COM 101, 102 6

Earth Science Concentration Requirements 94

GL 101/104, 102/105, 103 12
GL 203, 305 or 309, 311, 330, 331, 333, or 365 26.5
GEO 101, 102, 334 (General Education, Area Three A—three courses) 12
BIO 111, 112, 114 12
CHM 121, 122, 141 15
PHY 111/101, 112/102, 113/103, 123 16.5

Additional General Education Electives 12

Area One 8
Area Three B 4

Electives 26-28

Total (minimum requirement) 192

*Field and clinical experiences required.
**May be waived with a score of nineteen or better on the math section of the ACT.

Earth Science Education as a Second Teaching Field

Thirty-three and one-half credit hours minimum are required for earth science as a second teaching field. Required courses are GL 101/104, 102/105, 103, 203, 330, 331; GEO 101, 334.

Economics Education

Economics education may be chosen as a second teaching field only. (See Social Studies Comprehensive Education for the major teaching field requirements in this area.) To be recommended for Ohio Provisional Certification in this teaching field, a student must also have completed the program of a major teaching field. Thirty credit hours are required, including EC 201, 202, 203, 301, 340, 441, 321; and five hours of economics electives.

Educational Media K-12 (Library Science Education)

The program in educational media prepares students to serve as educational media specialists in elementary or secondary school library media centers. A student may choose from several options. Students may choose a program designed to prepare them to work in either an elementary or a secondary school (K-12); or they may couple preparation in educational media with a program in elementary education; or they may choose educational media as a second field coupled with one or more secondary teaching fields. Students are strongly advised to complete at least one teaching field concurrently with the preparation to serve as an educational media specialist.

Degree Requirements—Educational Media K-12

Bachelor of Science in Education Degree

Professional Education Requirements 51-54

Phase I*

ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*

ED 321, 322, 323, 327, 403 or 404, 432, 464; LCS 449 15

Phase III*

ED 422, 440 4
LCS 481, 482 12
ED 458 or 429*** 6-9
Related Requirements 13-14

PSY 111 4
MTH 127 or 304** 3-4
COM 101, 102 6

Educational Media Requirements 30
LCS 411, 491, 421 9
LCS 461, 463, 435 10
ED 315, 421 6
LCS elective 5

Additional General Education Requirements 36

Area One 8
Area Two 12
Area Three A 8
Area Three B 4
Area Three A or B 4

Electives or Second Teaching Field 62

Total (minimum requirement) 192

*Field and clinical experiences required.
**May be waived with a score of nineteen or better on the math section of ACT.
***If a second teaching field is chosen, the student will complete student teaching in that teaching field. If the student does not select a second teaching field, a six credit-hour practicum (ED 458) in an elementary or secondary school classroom is required.

Educational Media (1-8) as a Second Teaching Field for Elementary Education Majors

Educational media (1-8) may be elected as a second teaching field. Thirty credit hours are required, including LCS 411, 421, 435, 461, 449, 481, 491; ED 315, 415, and 421.

Educational Media (7-12) for Secondary Education Majors

Library science education may be elected as a second teaching field only. Thirty credit hours are required, including LCS 411, 421, 461, 463, 491, 435, 449, 482, and one elective.

Elementary Education

The minimum requirement for graduation with the Bachelor of Science in Education degree and Ohio certification in elementary education is 192 credit hours (which may include six hours of college service physical education) and a cumulative grade point average which meets or exceeds that in effect at the time you are admitted to the college. A minimum of forty-five credit hours of professional education and at least one area of concentration are required within the 192 hours.

Concentrations, which provide an opportunity for a student to develop competence in a specific area of the elementary curriculum, are available in the following subjects:

Early Childhood-Kindergarten*  
Educational Media*  
History  
Humanities  
Mathematics  
Physical Education*  
Psychology  
Science-General  
Social Studies

Special Education-Developmentally Handicapped*  
Moderately, Severely, and Profoundly Retarded*  
Specific Learning Disabilities*  
Visual Arts*

A standard elementary certificate may be validated for teaching these areas in the elementary school.

Degree Requirements—Elementary Education

Bachelor of Science in Education Degree

Professional Education Requirements 57-59

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*
ED 311, 315, 316, 317, 437, 417, 403, 464, 327, 321, 322, 323 27

Phase III*
ED 419, 422, 440 16-18

Related Requirements 77

(includes General Education requirements)
AED 231, 431 6
BIO 101, 102, 103 12
COM 103, 205 8
ED 241, 242, 243 9
ENG 111, 112, 342, 497 16
HPR 281, 331 7
MTH 343, 344 8
MUS 165, 365 7
PSY 111 4

Social Studies Requirements 27
GEO 101, 102, 103 (choose one) 4
EC 300 3
SOC 111 4
HST 111, 112, or PLS 112, 113 (choose two courses from one sequence) 8
HST 121, 122 (choose one) 4
Non-Western history: choose one course from Asian survey, Latin American survey, Afro-American survey, or Africa south of the Sahara 4

Additional General Education Requirements 8
Area Three B—two courses 8
Electives and Concentration 18-20

See following list of Concentration requirements:

Total (minimum requirement) 192

Field and clinical experiences required.

Early Childhood Education Concentration 19-20
ED 409, 411, 412, 414 16
COM 421 or TH 370 3-4

Educational Media Concentration 31
LCS 411, 421, 461, 491, 435, 449 19
LCS 481 (usually included as part of student teaching) 6
ED 421, 415 6

History Concentration 23
In addition to the social sciences courses taken to fulfill elementary education requirements, students should select courses as follows:

Recommended Courses
HST 218 or 219 4
HST 300 4
One course from any American history sequence at 200 level or above 4
One course from any European history sequence at 200 level or above 4
One non-Western history course (Far Eastern, African, Byzantine, Latin American) 4
ED 448 3

Humanities Concentration 20
Choose a total of twenty credit hours with at least one course each from four of the following areas:

Area One
Art history 4
AED 214 4
AED 441 3
One art education studio/crafts course 3

Area Two
ENG 190, 201 4
ENG 202, 203, 204, 205 4

Area Three
LCS 445 3

Area Four
CPL 201, 202, 203 4
CLS 320 4

Area Five
Any music listening course 4

Area Six
Any religion or philosophy course 4

Area Seven
TH 101, 102, 220, 370, 131, 180 3-4

Mathematics Concentration 16-17
MTH 345 4
ED 413 3
ED 418 3
ED 370 or 470 (mathematics workshops recommended) or one of the following: LCS 485, 486, or 487 3-4
One of the following:
MTH 127, 129, 130, 131; STT 164 3

Physical Education Concentration 40
HPR 100, 241, 260, 212, 220, 221, 350 351, 382, 450, and 455; ANT 201
Note: HPR 281, Physical Education for the Elementary School, is not required for those students choosing this concentration.
HPR 382 is a prerequisite for student teaching.

Reading Concentration 18
ED 415, 421, 432, 454, 456 15
TH 370 3

Science Concentration—General 16-17
Any four of the following not previously taken to fulfill elementary education major requirements in science:
CHM 101, 102, 121
GL 101, 102, 103
PHY 121/131, 122/132, 123/133, 124/134, 125/135
Biology elective

Social Studies Concentration 23
In addition to the social sciences courses taken to fulfill elementary education requirements, students should select courses as follows:

Required Courses
HST 218 or 219 4
Two of the following:
GEO 101, 102, 103, 262, 271, 370 8
One political science or economics course 4
One sociology or anthropology course 4
ED 448 3

Special Education Concentration—Developmentally Handicapped (DH) 30
There are a number of prerequisites for entering special education programs. Please see an adviser in the College of Education and Human Services before selecting this program.
Student teaching experience is required for each area of special education certification.
The following sequence must be maintained:
ED 441, 454, 455, 442 12
(ED 441 and 455 may be taken concurrently; ED 454 and 442 may be taken concurrently.)
ED 456, 302, 445 9
ED 458 6
HPR 212 3
English Education

The English education program is intended only for those seeking secondary certification. Departmental requirements are similar to those for the Bachelor of Arts degree in English, but college requirements differ. Advisers will be assigned in the College of Education and Human Services; however, all English education majors are welcome to consult the Department of English concerning the major program. It is suggested that students elect courses either in American history or in British history, depending on their major interest. Students are advised to consult the department for a list of the 400-level courses that will be offered during a given academic year; these courses are open only to students who have completed twelve hours of 300-level courses.

Degree Requirements—English Education

Bachelor of Science in Education Degree

Professional Education Requirements 45-47

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*
ED 321, 322, 323, 327, 404, 432, 464, 332 15

Phase III*
ED 422, 440, 429 16-18

Related Requirements 13
PSY 111 (General Education, Area Three A—one course) 4
MTH 127 or 304** 3
COM 101, 102 6

English Education Major Requirements 48
ENG 203 or CPL 201, 202, or 203 4
ENG 255 4
ENG 341 4
ENG 480 or 497 4
ENG 351 or 352; 353 or 354; 355, 356 or 357 and one other course from this group 16
At least three of the following (each from a different category): ENG 410, 420, 430, 440, 450, 460, 470 12
Elective in composition or linguistics 4

Additional General Education Requirements 28
ENG 111, 112 8
Area Two 12
Area Three A 8
Electives 56-58

Total (minimum requirement) 192

*Field and clinical experiences required.
**May be waived with a score of nineteen or better on the math section of the ACT.

English Education as a Second Teaching Field

Forty-five credit hours are required, including ENG 111, 112, 203 (or CPL 201, 202, 203), 255, 341, 480 or 497; ENG 351 or 352, 353 or 354, 355, 356, or 357; two electives in literature, linguistics, or writing; ED 432.

General Science Education

General science may be elected as a second teaching field only. Required are fifty-four credit hours, including BIO 111, 112, 113; CHM 121, 122, 141; PHY 111/101, 112/102, 113/103; GL 101/104, 102/105, 103.

Geography Education

Geography education may be chosen as a second teaching field only. (See Social Studies Comprehensive Education for the major teaching field requirements in this area.) To be recommended for Ohio Provisional Certification in this teaching field, a student must also have completed the program of a major teaching field. Thirty credit hours are required, including GEO 101, 102, 103; and eighteen hours of advanced courses chosen from GEO 230, 242, 262, 302, 331, 334, 343, 365.
History Education

History Education program prepares the student to teach history in the secondary schools. The program requires advanced work in U.S., European, and other history. The student must also complete the requirements of, at least one second teaching field in a related social science (economics, geography, political science, or sociology). More than one supporting field is recommended (see Social Studies Education for comprehensive program). Advisers will be assigned in the College of Education and Human Services; however, students are encouraged to consult an adviser in the Department of History for specific course recommendations.

Degree Requirements—History Education

Bachelor of Science in Education Degree

Professional Education Requirements

| Phase I* | ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 | 14 |
| Phase II* | ED 321, 322, 323, 327, 404, 432, 464, 439, 448 | 18 |
| Phase III* | ED 422, 440, 429 | 16-18 |

Related Requirements

| PSY 111 (General Education, Area Three A—one course) | 4 |
| MTH 127 or 304** | 3 |
| COM 101, 102 | 6 |

History Education Major Requirements

| HST 300, 498 | 8 |
| U.S. history (upper division) | 8 |
| European history (upper division) | 8 |
| Other history (Canadian, Latin American, African, Asian) | 8 |
| History electives | 16 |

Related Social Science Second Teaching Field

Courses to complete the requirements of a second teaching field in one of the following areas: economics, geography, political science, or sociology

Additional General Education Requirements

| Area One | 8 |
| Area Two | 12 |
| Area Three B (REL 110, 111, or 112 recommended) | 4 |

Electives

24-26

Total (minimum requirement)

192

*Field and clinical experiences required.

**May be waived with a score of nineteen or better on the math section of the ACT.

History Education as a Second Teaching Field

Forty-five credit hours of history are required, including at least two advanced courses in each of the following areas: U.S. history, European history, and other history as defined previously.

Latin Education

Latin education may be elected as a second teaching field only. Thirty credit hours are required, beginning at the 201 level or above. Remaining hours may be distributed among LAT 351, 353, 355, 357, 451, 453, and 455; these courses are repeatable by number but not by content. Greek, classical humanities, and linguistics courses are recommended.

Mathematics Education

The mathematics education program prepares students to teach mathematics in the secondary schools. A student may select either a physics sequence or a computer science sequence to fulfill the mathematics education major requirements.

Degree Requirements—Mathematics Education

Bachelor of Science in Education Degree

Professional Education Requirements

| Phase I* | ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 | 14 |
| Phase II* | ED 327, 404, 432, 464, 437, 338, 321, 322, 323 | 18 |
| Phase III* | ED 422, 440, 429 | 16-18 |
Related Requirements 10
PSY 111 (General Education, Area Three A—one course) 4
COM 101, 102 6
Mathematics Education Major Requirements 60-62
MTH 132, 133, 231 15
MTH 280, 355, 431, 440, 451, 471 20
STT 360 4
Two of the following:
  MTH 432, 452, 457, 458, 472; STT 361 6-7
  PHY 240/200, 241/201, 242/202 15
For those students pursuing the computer science option, the following courses are required:
  CS 141, 142, 146, 400
  CEG 260, 320 recommended; MTH 257 strongly recommended 16
Additional General Education Requirements 24
Area One 8
Area Three A 8
Area Three B 4
Area Three A or B 4
Electives 38-53
Second or supporting field suggested
Total (minimum requirement) 192
*Field and clinical experiences required.
**Students who elect the computer science option must complete a three-course sequence for General Education, Area Two.

Mathematics Education as a Second Teaching Field

Students who elect mathematics as a second teaching field are required to take a minimum of thirty-four credit hours of mathematics, including three mathematics electives. MTH 132, 133, 231, 280, 440, 451, and 471 are required. One of the following is required: CS 141, 142, 146, or 400.

Modern Languages Education

Degree Requirements—Modern Languages Education

Bachelor of Science in Education Degree

Professional Education Requirements 45-47
Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14
Phase II*
ED 327, 404, 432, 464, 332 or 334, 321, 322, 323 15
Phase III*
ED 422, 440, 429 16-18

Related Requirements 13
PSY 111 (General Education, Area Three A) 4
MTH 127 or 304** 3
COM 101, 102 6
General Education Requirements 28
Area One 8
Area Two 12
Area Three A 8

Modern Languages Education Major Requirements 48-50
FR 201, 202, 301, 302, 321, 322, 341, 342, 361 34
French electives 16
or
GER 201, 202, 301, 302, 321, 322, 341, 342 32
German electives 16
or
SPN 201, 202, 301, 302, 321, 322, 341, 342, 331, 332, 361 42
Spanish electives 8

Required Second Teaching Field 36
ENG 203, or CPL 201, 202, 203 4
ENG 255, 341, 497 or 480, 351 or 352, 353 or 354, 355 or 356 or 357 24
English electives in literature, linguistics, composition 8
Electives 18-22

Total (minimum requirement) 192
*Field and clinical experiences required.
**May be waived with a score of nineteen or better on the math section of the ACT.

Modern Languages Education as a Second Teaching Field

Modern languages may be chosen as a second teaching field. A student may prepare to teach French, German, or Spanish by following one or more of the following programs. Two years of credit in high school language or the equivalent first-year college courses (101, 102, 103) are prerequisite for each program. The following sequence is recommended: 101, 102, 103, 201, 202, 321, 322, 341, 342, 361 (French and Spanish only; German majors need one elective) and eight hours of literature. (Students able to demonstrate proficiency in 101, 102, 103 courses may add these to their transcripts as proficiency credit courses or may elect upper-level courses to complete the forty-five credit hour certification requirements. The latter is preferred.)
Physical Education K-12

Degree Requirements—
Physical Education K-12

Bachelor of Science in Education Degree

Professional Education Requirements 48-50

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*
ED 327, 321, 322, 323, 432 6
ED 403 or 404 3
HPR 381, 382, 383 9

Phase III*
ED 422, 440, 429 16-18

Related Requirements 17
PSY 111 4
SOC 111 4
COM 101, 102 6
MTH 127 or 304** 3

Physical Education Major Requirements 96-99
BIO 101, 103 8
ANT 201 4
HPR 212, 220, 221, 241, 242, 260 15
HPR 340, 350, 351, 355 15
HPR 440, 450, 455 11

Sports Skills Requirement 15
Seven different sports and three different levels are required as follows: one aquatic, one dance, two individual sports, two team sports, and one lifetime sport. At least one course must be taken at the advanced level and two at the intermediate level. The remaining four courses can be taken at the beginning level.

Concentration 28-31
Choose one from the following:
adapted physical education, aquatics, athletic training, coaching, or research

Additional General Education Requirements 20
Area One 8
Area Three A 4
Area Three B 4
Area Three A or B 4

Electives or Second Teaching Field 6-12

Total (minimum required) 192

*Field and clinical experiences required.
**May be waived with a score of nineteen or better on the math section of the ACT.

Physical Education (Secondary, Grades 7-12) as a Second Teaching Field

These courses are required: BIO 103, ANT 201, HPR 212, 241, 260, 340, 350, 351, 382, and 455. Each student is also required to take five sports skill courses: one aquatic, one dance, one team sport, one individual sport, and one lifetime sport. One course must be taken at the advanced level and one at the intermediate level.

For students in this second teaching field, the three-course sequence of BIO 101, 103, and ANT 201 may be used for meeting the General Education science requirement. This credit is therefore not included in the total credit hours for this second field.

HPR 381, 382, and 383, and the sports skill requirement are prerequisites for student teaching.

Physics Education

The physics education program prepares students to teach physics, integrated physical science, and general science in the secondary school. The concentration in physics provides intensive preparation in that area with courses in modern physics, electricity and magnetism, and analytical mechanics. The program also includes basic and supporting courses in biology, earth science, and chemistry, related course work in mathematics, and the required professional education courses. Students are strongly advised to complete a second teaching field in biological sciences, chemistry, earth science, or mathematics, in addition to the basic program in physics.

Degree Requirements—
Physics Education

Bachelor of Science in Education Degree

Professional Education Requirements 45-47

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*
ED 327, 404, 432, 464, 431, 321, 322, 323 15

Phase III*
ED 422, 429, 440 16-18

Related Requirements 10
PSY 111 (General Education, Area Three A—one course) 4
COM 101, 102 6
### Physic Education as a Second Teaching Field

Physics education as a second teaching field requires thirty and one-half credit hours including PHY 240/200, 241/201, 242/202, 243, and CHM 121, 122, 141.

### Political Science Education

Political science may be chosen as a second teaching field only. (See Social Studies Comprehensive Education for the major teaching field requirements in this area.) To be recommended for Ohio Provisional Certification in this teaching field, a student must also have completed the program of a major teaching field. Thirty-two credit hours are required, including PLS 112, 113, and twenty-four hours chosen from PLS 122, 123, 204, 225, 226, 231, 326, 340, 380.

### Rehabilitation Education

The rehabilitation education program offers two areas of concentration: generalist and mental health. Graduates are employed in human service agencies which serve individuals who are physically, mentally, or socially disadvantaged. The program also prepares students for graduate study in rehabilitation counseling or related areas. Curriculum flexibility attracts students who are interested in modifying program requirements to reflect their special interests.
Science Comprehensive Education

The completion of the science comprehensive program permits students to teach any science course offered in the secondary school. The program includes basic and supporting courses in physics, chemistry, biology, earth science, mathematics, and the professional education courses required of all candidates for secondary school certification.

Degree Requirements—Science Comprehensive Education

Bachelor of Science in Education Degree

Professional Education Requirements 45-47

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*
ED 327, 404, 432, 464, 431, 321, 322, 323 15

Phase III*
ED 422, 440, 429 16-18

Related Requirements 10
PSY 111 (General Education, Area Three A—one course) 4
COM 101, 102 6

Electives 21

Total (includes seventy-seven hours of related requirements or up to ninety credit hours of transferred credit) 192

*Because of an articulation agreement with Sinclair Community College and Clark Technical College, graduates of their mental health/social services program may apply many of their previous courses to the mental health concentration. Other students must also complete related requirements listed in the generalist program.

Social Studies Comprehensive Education

The social studies comprehensive program prepares students to teach integrated social studies and all component areas in which they have at least eighteen credit hours of course work. The program consists of basic and advanced courses in American history, world history, political science, economics, sociology, and geography, advanced courses in U.S. history and non-U.S. history, and a concentration of advanced courses in one or more social science fields.

Degree Requirements—Social Studies Comprehensive Education

Bachelor of Science in Education Degree

Professional Education Requirements 48-50

Phase I*
ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223 14

Phase II*
ED 321, 322, 323, 327, 404, 432, 464, 439, 448 18

Phase III*
ED 422, 440, 429 16-18

Related Requirements 13
PSY 111 (General Education, Area Three—one course) 4
MTH 127 or 304** 3
COM 101, 102 6

Science Comprehensive Education

Major Requirements 119.5
BIO 111, 112, 114 12
BIO 202, 302 10
Two of the following:
BIO 204, 205, 206, 303 10
CHM 121, 122, 141 15
CHM 211/215, 212/216, 213/217 18
GEO 101, 334 8
GL 101/104, 102/105 8
GL 203, 311 or 330, 333 or 331 13.5
MTH 132, 133 10
PHY 240/200, 241/201, 242/202 15

Additional General Education Requirements 16
Area One 8
Area Three B 4
Area Three A or B 4

Electives 0-2

Total (minimum requirement) 192

*Field and clinical experiences required.
Social Studies Comprehensive Education
Major Requirements 93

General Social Studies Sequence
EC 201, 202, 203 9
GEO 101, 102, 103 (choose two) 8
PLS 112, 113 8
SOC 111, 112 8
ATH 140 4

History
HST 300 4
HST 498 4
U.S. History 8
European History 8

Electives chosen from Canadian, Latin American, and/or Asian history 8

Additional courses in two of the following areas: sociology, economics, geography, political science 24

Additional General Education Requirements 23
Area One 8
Area Two 12
Area Three B 3
Electives 11-13

Total (minimum requirement) 192
*Field and clinical experiences required.
**May be waived with a score of nineteen or better on the math section of the ACT.

Sociology Education

Sociology education may be chosen as a second teaching field only. (See Social Studies Comprehensive Education for the major teaching field requirements in this area.) To be recommended for Ohio Provisional Certification in this teaching field, a student must also have completed the program of a major teaching field. Thirty credit hours are required, including SOC 111, 112; and twenty-four hours chosen from SOC 210, 221, 301, 340, 360, 363, 444.

Special Education

Students can meet Ohio certification requirements in either developmentally handicapped, specific learning disabilities, or moderately, severely, profoundly retarded (MSPR). In each case, the basic elementary education program is followed and dual elementary/special education certification is strongly suggested. Secondary education and noneducation majors may add developmentally handicapped or MSPR as a certification area by completing the courses listed below. Specific learning disabilities requires prior or simultaneous certification in another area of education. Noneducation majors who are interested in this latter area should contact an adviser in special education.

Speech and Theatre Education

All students are required to complete thirty hours of noncredit volunteer work with exceptional children and a special education entrance conference. Details are available from the certification adviser’s office of the special education office.

Certification Requirements—Special Education
Developmentally Handicapped (DH) Concentration

Add these courses to professional requirements:
ED 441, 454, 455, 442*, 445, 458, 456, 302* 27
HPR 200 3

Moderately, Severely, Profoundly Retarded (MSPR) Concentration

Follow the elementary education program.
Add these courses:
ED 441, 445, 302, 459, 451, 452, 453, 458 27
HPR 212 3

Specific Learning Disabilities (SLD) Concentration

Follow the elementary education program.
Add these courses to professional requirements:
ED 441, 454, 455, 442*, 456, 458, 302* 24
HPR 212 3

Secondary and Noneducation Majors

The following courses must be taken before entering the concentrations:

Phase 1
ED 211-217 14
ED 403, 317* or 415* or 432, 437* 9
MTH 343 or equivalent 4

Certification Students

Students with a bachelor’s degree desiring certification only should contact an adviser in special education.

Speech and Theatre Education

The speech and theatre education major must elect either a communication or theatre arts concentration to be combined with English as a second teaching field. The program is designed to prepare students to teach communication and theatre in the secondary schools.
### Degree Requirements—Speech and Theatre Education

**Bachelor of Science in Education Degree**

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<th>Professional Education Requirements</th>
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<td><strong>Phase II</strong></td>
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<td>ED 327, 404, 432, 464, 332 or 333, 321, 322, 323</td>
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<td><strong>Phase III</strong></td>
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<td>ED 422, 440, 429</td>
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<td>Related Requirements</td>
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<td>PSY 111 (General Education, Area Three A—one course)</td>
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<td>MTH 127 or 304**</td>
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<td><strong>Speech and Theatre Education Major Requirements</strong></td>
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<td>Core courses:</td>
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<td>COM 101, 102, 111</td>
<td>10</td>
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<td>TH 101, 102, 220</td>
<td>11</td>
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<tr>
<td>One of the following concentrations:</td>
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<tr>
<td><strong>Communication Concentration</strong></td>
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<tr>
<td>COM 141, 232, 233, 252, 312 or 313, 335 and seventeen hours of approved elective hours in communication courses</td>
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<td><strong>Theatre Concentration</strong></td>
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<td>TH 144, 145, 146, 154, 155, 156; 244, 245, 254, 255; 257, 258</td>
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<td>TH 350, 352</td>
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<td>Three of the following:</td>
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<td>TH 360, 361, 366, 367, 368</td>
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<td><strong>Additional General Education Requirements</strong></td>
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<td>Area Two</td>
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<td>Area Three A</td>
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<td><strong>English Requirements</strong></td>
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<td>(required second teaching field)</td>
<td>36</td>
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<tr>
<td>ENG 203 (or CPL 201, 202, 203), 255, 341, 480 or 497</td>
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<tr>
<td>ENG 351 or 352, 353 or 354, 355 or 356 or 357; two electives in literature, linguistics, or writing; ED 432</td>
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<td><strong>Electives</strong></td>
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<td>14-16</td>
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<tr>
<td><strong>Total (minimum requirement)</strong></td>
<td>192</td>
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</tbody>
</table>

*Field and clinical experiences required.

**May be waived with a score of nineteen or better on the math section of the ACT.*
Liberal Arts
The College of Liberal Arts offers a wide variety of degree programs in the fine arts, the humanities, and the social sciences. The college also assists in preparing students for professional and graduate study and cooperates with other colleges in offering joint professional and preprofessional programs. In addition, the college offers the major portion of General Education courses that comprise a fund of knowledge basic to a student’s ability to formulate and analyze ideas and concepts. This core of knowledge is the nucleus of a liberal education.

Programs leading to the Bachelor of Arts degree are offered in anthropology; art and art history; classical humanities; communication; economics; English; French; geography; German; Greek; history; Latin; modern languages; motion picture history, theory, and criticism; music; philosophy; political science; religion; selected studies; social and industrial communication; social work; sociology; Spanish; theatre studies; and urban affairs. Programs leading to the Bachelor of Fine Arts degree are offered in acting, art, dance, design/technology, directing/stage management, motion picture production, selected studies, and theatre arts management. A program leading to the Bachelor of Science degree is offered in geography and urban affairs. Programs leading to the Bachelor of Music degree are offered in applied music, music composition, music education, music history and literature, and music theory. The college offers minors in communication, French, geography, German, religion, and Spanish. Students who meet the university requirements with reference to registration, residence, scholarship, fees, and General Education and college requirements, and who maintain a satisfactory record, receive degrees appropriate to the curriculum completed.

The college offers graduate programs leading to the Master of Arts degree in English and history, the Master of Humanities degree, and the Master of Music degree in music education, and participates with the College of Science and Engineering in a multidisciplinary program leading to the Master of Arts degree in applied behavioral science.

Admission and Advising

Admission Requirements

Admission to the College of Liberal Arts requires the satisfactory completion of twenty-four credit hours and a grade point average of 2.0. Some departments have additional requirements for admission. Students not meeting such criteria are designated as Undecided—Liberal Arts majors.
Transfer Credit
Credits earned in junior or community colleges will normally apply only to the requirements of the freshman and sophomore years. Students should consult their departmental adviser to see which transfer courses will apply toward specific major requirements.

Advising
The liberal arts advising office advises all undecided majors in liberal arts. The office sends out checklists covering university and college requirements to all new students in the college and to seniors at the appropriate time. A student who has declared a major in one of the liberal arts disciplines is assigned an academic adviser in that discipline. Students are encouraged to consult with departmental advisers for their major and with the advising office for their college and university requirements.

Degrees and Areas of Study

General Requirements
To be eligible for a degree from the College of Liberal Arts, a student must:
1. Fulfill the university General Education requirements.
2. Complete the residency requirement of forty-five credit hours at Wright State. At least fifteen of the last forty-five hours for the degree must be taken in residence.
3. Complete at least 192 credit hours with at least a 2.0 cumulative grade point average. No more than eight hours of physical education courses will apply toward the degree.
4. Complete at least one hundred credit hours of work within the college.
5. Complete at least sixty credit hours in upper-division courses (those numbered 300 or above). At least thirty of these credit hours must be taken at Wright State.

Bachelor of Arts Degree
Successful study for the Bachelor of Arts degree includes the development of basic skills as well as a general introduction to issues of the culture. The degree provides career opportunities in such areas as communications, foreign service, government, journalism, teaching, and social work, and preprofessional training for such fields as law, medicine, and business.

In addition to requirements of the major, composed of a departmental unit in courses taken in one or more departments, the Bachelor of Arts degree includes completion of the foreign language or research methods requirement. Except in unusual circumstances, the student is limited to sixty-eight hours in the major department; exceptions must have prior approval of the dean of the college. To satisfy the foreign language requirement, a student must demonstrate proficiency at the 202 level in a foreign language either by satisfactorily completing course work or by examination. The student who wishes to fulfill the college language requirement in French, German, Spanish, or Russian by proficiency testing should consult the Department of Modern Languages. The student who wishes to fulfill the requirement in Greek or Latin should consult the Department of Classics. Other languages are acceptable, subject to approval by the Department of Modern Languages and the student's major department. In continuing a language begun elsewhere, the student is placed at an appropriate level. For details on proficiency and placement testing, see guidelines under the Department of Modern Languages. The student who selects the research methods option must complete twenty-one to twenty-four credit hours, approved by his or her major department, distributed as follows: computer science (two courses), logic (two courses) or logic (one course) and philosophy of physical or social science (one course); statistics (two courses). Philosophy courses used to fulfill the research methods requirement may not also be applied to General Education, Area Three requirements. The student should check with the department or the advising office for further details. Either the foreign language or research methods requirement must be satisfied in its entirety; they may not be mixed. All candidates for a degree in the college must complete a minimum of 192 hours with at least a 2.0 cumulative grade point average.

Bachelor of Fine Arts, Bachelor of Science, and Bachelor of Music Degrees

Bachelor of Fine Arts
The curricula for the B.F.A. degree provide more specialized training than that offered in the B.A. programs. The Bachelor of Fine Arts programs in art and in theatre arts are preprofessional programs with intensive concentrations in the departmental major and related concentrations in the creative arts.
Bachelor of Science
Curricula for the Bachelor of Science degree are offered in geography and urban affairs. Those programs should be planned in close consultation with advisers in these areas. The B.S. degree attempts to achieve a different focus, especially in the areas of computer programming, mathematics, and statistics, and to meet needs not currently serviced by the B.A. degree.

Bachelor of Music
This degree is designed for the student who is seeking a professional career in music. Consequently, the B.Mus. major is a more concentrated, more highly structured program than the program for the B.A. The Bachelor of Music in applied music requires language competence in either French, German, or Spanish. The Bachelor of Music in theory requires language competence in either French or German. The Bachelor of Music in history and literature requires language competence in French, German, or Latin. For further details, see the Department of Music.

In addition to the university and college degree requirements, the student should always consult the requirements of the curriculum specified by the appropriate department.

Interdisciplinary Study
Interdisciplinary majors within the College of Liberal Arts are offered in selected studies, social and industrial communication, and urban affairs.

Interdisciplinary course work, offered jointly by participating departments within the college or with departments in other colleges, is available in the Departments of Art and Art History, Classics, Communication, English, Geography, History, Philosophy, Political Science and Urban Affairs, Religion, and Sociology and Anthropology. See individual programs and course listings.

Combined Liberal Arts/ Business Program
While working on the satisfactory completion of a baccalaureate degree program in the College of Liberal Arts, a student can use free elective credits to take a professional core of business courses to earn a minor in business and satisfy the course prerequisites for the Master of Business Administration program at Wright State. Students with an adequate Admission Index can then earn an M.B.A. degree from the College of Business and Administration with an additional (fifth) year of successful full-time study. Contact the liberal arts advising office for details.

Health Sciences Minor
Degree requirements in the College of Liberal Arts permit students to complete both the core of premedical science requirements and a major of their choice. Majoring in liberal arts is an excellent way to help develop the broad range of intellectual and intuitive skills that make successful physicians. For a sample four-year curriculum, contact the liberal arts advising office.

Honors at Graduation
Honors are awarded at graduation to students in recognition of the superior quality of their work. Currently, departmental honors programs are available in anthropology, art history, classics, communication, English, geography, history, modern languages, motion pictures, music, political science, religion, selected studies, social work, and sociology. A student interested in pursuing an honors program as prescribed by one of these departments should consult with the chair of the appropriate department.

Cooperative Education Program
A number of departments in the College of Liberal Arts offer an optional cooperative education program for academic credit. (See the Liberal Arts listing in the course description section.) Cooperative education is a plan which combines academic study with related work experience. As a result, participation in cooperative education provides the student with an opportunity to apply classroom learning and interest to practical work settings while exploring potential career fields.

For more information, see the specific liberal arts department programs and contact the liberal arts cooperative education coordinator in the Cooperative Education office.

Teacher Certification
The Bachelor of Arts degree with Ohio teacher certification is offered in art, English, and history for students who meet the requirements of the College of Liberal Arts and the College of Education and Human Services. Certification in speech and theatre education is available to the student who combines it with English as a second teaching field. French, German, Latin, and Spanish may be elected as second teaching fields only. These candidates are counseled in their academic programs by faculty advisers in the College of Liberal Arts and in their choice and fulfillment of professional education requirements by advisers in the College of Education and Human Services. Prospective teachers who wish to pursue the Bachelor of Science in Education degree with a major in one of
the liberal arts disciplines should register in one of the teacher education curricula in the College of Education and Human Services and indicate their choice of teaching fields. See individual programs under College of Education and Human Services.

Anthropology
See Sociology and Anthropology.

Art and Art History

Professor Cantelupe (University)
Associate Professors Kiser, Koerlin, Leach, Macaulay, McDowell (chair), Must, Nathanson
Assistant Professors Fitch, Geibert

The Department of Art and Art History offers programs leading to the Bachelor of Arts and the Bachelor of Fine Arts degrees, with areas of concentration in art history, drawing, film/video, painting, photography, printmaking, and sculpture, and with course sequences in visual communications and museology/gallery management. The B.A. degree is designed for those students who wish to combine a liberal education with specific studies in art. The B.F.A. degree is designed for students who want to pursue a more intense professional studio program in art.

Because self-expression and self-learning are ultimate goals of the program, the student is largely responsible for determining the options which best meet individual needs and interests.

In the studio area, studies begin with introductory courses in drawing, sculpture, and photography. These courses are designed for the beginning artist and will direct and accelerate development in the visual arts. One resource which students bring to the program is their personal sensibility and understanding. The program aids in expanding and expressing these qualities by exploring the essential processes and language basic to all visual arts. Rather than following a system or structure of independent courses in a given dimension, medium, or discipline, issues and ideas are investigated in a variety of visual modes.

B.F.A. students are required to have their work reviewed by the entire staff. The B.F.A. review is normally conducted when the student has completed between forty and sixty credit hours in the department. Those who wish to become B.F.A. candidates must petition the faculty at the time of their review. The department will notify the student in writing of its decision. Students who do not meet the basic proficiency standards of the department during their first review may petition to have a second review of their work prior to the completion of eighty-four credit hours in art. All candidates for the B.F.A. degree must make a senior presentation of their work, and be represented in the senior exhibition.

Students who wish to apply for transfer credit in art must submit a qualifying portfolio of studio work completed at another institution. Transfer credit is determined upon review of the work by members of the art faculty. First-year students are required to submit examples of their work only if they are seeking advanced placement; otherwise, all first-year students in art are admitted to the general curriculum. Unless and until a transfer review for advanced placement is requested by a transfer student and conducted by the faculty, all studio transfer students, regardless of experience, will begin their studies with Introduction to Color, ART 209, or the first of three beginning-level courses offered (Fundamentals of Drawing, ART 206; Introduction to Photography, ART 207; or Fundamentals of Sculpture, ART 208) and continue with prerequisite sequences.

Candidates for a degree in art may prepare for graduate study, careers in teaching, or the professional practice of art. Candidates for the B.A. or B.F.A. with teaching certification must complete specific requirements as outlined by the laws and regulations governing Ohio teachers’ education and certification.

Art History Honors Program

The honors program of the Department of Art and Art History is designed to give students who have demonstrated outstanding academic ability and superior accomplishments in art history the opportunity to complete a program which will encourage and recognize their distinguished efforts. Such students may earn an honors degree by completing the departmental major requirements, by maintaining a high academic record, and by completing successfully a senior honors project. Information regarding eligibility, application procedures, and specific requirements may be obtained from the Department of Art and Art History office. Students are usually admitted to the program during the fourth quarter prior to graduation.
Degree Requirements—Art
Bachelor of Fine Arts Degree

General Education Requirements 47

Departmental Requirements* 122
ART 211, 212, 213 and three additional art history courses 24
Ten courses, two from each of the following studio areas: painting, printmaking, sculpture, photography 40
Five additional courses in area of major concentration 20
Senior seminar 2
Departmental studio electives 24
Departmental or related electives 12
Nondepartmental Electives 23

Total 192

*B.F.A. degree students should enroll in two studio courses each quarter.

Sophomore Review
Minimum Requirements
ART 211, 212, 213 12
ART 206, 228 8
Two courses from two of the following studio areas: painting, printmaking, sculpture, photography 16
One additional studio course 4

Total 40

Degree Requirements—Art
Bachelor of Arts Degree

General Education Requirements 47

Departmental Requirements 68
ART 211, 212, 213 and one additional art history course 16
Eight courses, two each from four of the following studio areas: drawing, painting, printmaking, sculpture, photography 32
Departmental electives 20
Foreign Language or Research Methods Requirement 20-24
Nondepartmental Electives 53-57

Total 192

Degree Requirements—Art History

After completion of seven art history courses and prior to graduation, art history majors are required to participate in a writing workshop conducted by art history faculty members. The workshop may require expansion or further investigation of a paper submitted for a completed 400-level course.

Bachelor of Arts Degree

General Education Requirements 47

Departmental Requirements 68
ART 211, 212, 213, 219, or one course in art theory, art philosophy, or art criticism 20
One course each from four of the following art history areas: American, ancient-classical, medieval, Renaissance, Baroque, nineteenth century, twentieth century, non-Western 16
Three courses, one each from three of the following studio areas: drawing, painting, printmaking, sculpture, photography 12
Departmental electives 20

Foreign Language or Research Methods Requirement 20-24
Nondepartmental Electives 53-57

Total 192

Classics

Associate Professors C. King, W. King (chair)
Assistant Professor Gabbert

The Department of Classics offers majors leading to the Bachelor of Arts degree in classical humanities and in classical languages (Greek or Latin).

The study of the classics is concerned with the examination of the civilizations of Greece and Rome. It is the oldest area-study and the student must range through the disciplines of language and literature, art, archaeology, and history to appreciate fully the contributions of Greece and Rome to Western civilization.

Requirements for the major in classical humanities are quite flexible, but it is advisable for students to consult the Department of Classics in order to ensure a well-rounded and representative curriculum. The one inflexible requirement is study of Latin or Greek on the college level; the classical humanities major must complete at least twenty-four hours of language study and attain proficiency in at least one of the languages beyond the 202 level. A student may also major in either Greek or Latin; the student will be expected to develop some facility in the nonmajor language.

The major in classical humanities is a useful major for those who have not decided upon a specific vocation and who are interested in the humanities. A bachelor's degree in classical humanities is suitable for students who plan to terminate their formal education at the under-
graduate level. The major in classical languages is more suitable for students who wish to continue their studies on the graduate level; the areas of ancient history and classical archaeology as well as classics are open to them. The student who majors in either classical humanities or classical languages will find the bachelor’s degree useful in any position for which a liberal arts degree is appropriate.

Early consultation with the Department of Classics is important for students who wish to teach Latin or Greek in secondary schools. They will also need to consult the College of Education and Human Services for professional certification requirements in an additional teaching field, such as English or history.

**Classics Honors Program**

Superior students may, upon application to the Department of Classics, participate in the departmental honors program. They should have a grade point average of 3.5 in classics and a 3.0 overall and should have completed a substantial portion (twenty-seven to thirty hours) of the major requirements. For further details, consult the department.

**Degree Requirements—Classical Humanities**

**Bachelor of Arts Degree**

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>47</th>
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</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>56</td>
</tr>
<tr>
<td>Greek or Latin language</td>
<td>24</td>
</tr>
<tr>
<td>Classical humanities electives</td>
<td>32</td>
</tr>
<tr>
<td>Electives and Related Courses</td>
<td>89</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>192</td>
</tr>
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</table>

**Degree Requirements—Greek**

**Bachelor of Arts Degree**

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>47</th>
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<tbody>
<tr>
<td>Departmental Unit</td>
<td>56</td>
</tr>
<tr>
<td>Greek language</td>
<td>36</td>
</tr>
<tr>
<td>Electives in classical humanities or Latin Language</td>
<td>20</td>
</tr>
<tr>
<td>Electives and Related Courses</td>
<td>89</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>192</td>
</tr>
</tbody>
</table>

**Communication**

**Professors** Pruett (chair), Rickert, Sayer, Shupe

**Associate Professors** Buzzard, Byrum, Dreher, Eakins, Edwards, Fetzer, Orenstein, Welty

**Assistant Professor** Krischak (WOBC)

**Instructor** Ervin

Study in the Department of Communication provides a comprehensive understanding of communication. Specifically, students develop skills to communicate effectively in interpersonal, group, and organizational settings.

The Bachelor of Arts in communication is desirable for the person planning a communication-related career and/or the individual interested in personal development. Therefore, the department offers major programs of study in mass communication, organizational communication, and communication studies. Study in organization communication is appropriate for students seeking careers in public relations, training and development, or other organizational communication specialties. Study in mass communication is appropriate for students interested in journalism or media management and production. The communication studies program allows students to select courses from all of the major areas of the department to meet specific needs.

The Department of Communication in conjunction with the Department of Sociology and Anthropology also offers a Bachelor of Arts in social and industrial communication. This degree is designed to provide an understanding of social and communication variables affecting organizational productivity.

The communication major can expect to be involved in both theoretical and practical courses of study, and to understand communication from both the traditional and experiential points of view. Because of this interrelationship between theory and practice, students are advised to take advantage of the communication activities associated with the department, college, and university. Such activities
include cable television, WWSU-FM radio station, The Daily Guardian, the Public Relations Club, Rolling Stock, communication assignments through the College of Liberal Arts cooperative education program, and involvement in Dayton-area professional organizations.

Communication Honors Program
The honors program of the Department of Communication provides opportunities for advanced study to outstanding students. The program is intended as an enrichment for the existing program rather than as an alternative. The immediate goals for which individual student programs are constructed include: (1) developing abilities in conceptualization, research, and analysis, and (2) pursuing one or more selected areas of interest in the field of communication studies.

Entrance to the program requires the student to have completed forty credit hours in communication. In addition, the student must have a grade point average of 3.5 in the major and 3.0 overall average. Departmental honors will be awarded upon the completion of the required number of hours necessary for a major in communication and must include at least twelve credit hours in approved communication honors courses. The student must also complete a departmental honors project and maintain a 3.0 cumulative grade point average and 3.5 grade point average in communication courses during the quarters in which a student is a member of the honors program.

It is highly recommended that the student participate in the University Honors program, taking courses deemed relevant by the student and the adviser.

Cooperative Education Program
Cooperative education experience is available to qualified communication majors in both the public and private sectors. Cooperative job opportunities exist in the areas of mass communication, interpersonal and organizational communication, and public communication. Cooperative education offers students a means of partially financing their education while gaining career-oriented experiences. Students interested in cooperative education opportunities should contact the chair of the department.

Degree Requirements—Communication

Bachelor of Arts Degree
The major in communication is for the student interested in personal development and/or a career in education, industry, or government.

Communication majors are expected to achieve basic proficiency in communication skills and to master the essentials of communication theory. All communication majors must take twenty-four hours of required courses, as well as a minimum of forty additional hours in communication. They must also take twelve of twenty-four required related hours in a single department other than communication. This requirement is determined by each student with the guidance and approval of an adviser. All communication majors are encouraged to participate in communication activities outside the university.

Communication majors may qualify for state certification at the secondary level by taking the required professional courses in the College of Education and Human Services.

General Education Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Departmental Requirements</td>
<td>64</td>
</tr>
<tr>
<td>Required courses:</td>
<td></td>
</tr>
<tr>
<td>COM 101, 102, 111, 141, 203, 233, 252</td>
<td>24</td>
</tr>
<tr>
<td>Additional courses in major</td>
<td>40</td>
</tr>
<tr>
<td>Related Requirements</td>
<td>24</td>
</tr>
<tr>
<td>At least twelve hours in one field related to</td>
<td></td>
</tr>
<tr>
<td>the student’s special interests, to be chosen</td>
<td></td>
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<tr>
<td>with adviser’s approval. Electives in business,</td>
<td></td>
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<tr>
<td>classics, English, motion pictures, history,</td>
<td></td>
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<tr>
<td>philosophy, political science, psychology,</td>
<td></td>
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<tr>
<td>sociology, and theatre are appropriate.</td>
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<tr>
<td>Foreign Language or Research Methods Requirement</td>
<td>20-24</td>
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<tr>
<td>Electives</td>
<td>33-37</td>
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<tr>
<td>Total</td>
<td>192</td>
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Minor in Communication
The communication minor is appropriate for students who want additional skill development in communication or for whom theoretical understanding of communication processes will serve as a useful adjunct to a major program of study. Students in business, computer science, education, and nursing, in addition to students majoring in other areas of the liberal arts, may find the minor in communication enhances them both professionally and personally.

Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>COM 101, 102, 111, 141, 203, 233, 252</td>
<td>24</td>
</tr>
<tr>
<td>Additional Courses in Communication</td>
<td></td>
</tr>
<tr>
<td>At least eight hours must be at the 300 level</td>
<td></td>
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<tr>
<td>or above</td>
<td>12</td>
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</tbody>
</table>

Dance
See Theatre Arts
Economics

Professors  Anon, Blair (chair), Fabrycy, Kumar, Premus, Renas, Treacy
Adjunct Professor  Verdon
Associate Professors  Blake, Fichtenbaum, Swaney
Assistant Professors  Dung, Shahidi
Adjunct Assistant Professor  Crawford

The dimensions of economics range from the practical concerns of how a business firm strives for efficiency to the visionary questions concerning limits imposed by the laws of nature on the earth’s population and natural resources. Economics focuses on man’s efforts to improve his welfare, by understanding individual decision making in the face of relative scarcity and by studying the complex relationships between the production, consumption, and distribution of material goods within systems of markets, governments, and supranational institutions.

Students of economics develop the ability to reason logically, integrate broad perspectives, measure empirically, manipulate in the abstract, and imagine grandly. These skills and talents serve well in preparing students for careers in business, law, and government and for graduate programs in economics, business, and law. Graduates of our program are employed as professional economists in such diverse areas as urban economics, manpower and training analysis, business forecasting, school finance consulting, health and delivery systems evaluation, budget analysis, marketing consulting, government planning, and statistical analysis. Some of our graduates continue their education in our master’s program in social and applied economics.

The program outlined below is designed to give our students both the background that will broaden and maintain their future options and the specific skills necessary to use and apply economic ideas. Departmental undergraduate advisers are available to any student who may need advice about formulating and attaining career goals, as well as making decisions concerning elective courses.

Candidates for a Bachelor of Arts degree with a major in economics are required to take a minimum of forty-two credit hours in the Department of Economics. Basic courses are supplemented by economics electives.

Degree Requirements—Economics

Bachelor of Arts Degree

General Education Requirements  38
Waive nine hours of Area Three

Departmental Requirements  42
EC 201, 202, 203  9
EC 315, 316, 317  12
Economics electives  21

Related Requirements  23-26
MTH 129, 224, 226 (226 recommended only)  6-9
QBA 201, 202, 303  9
Two upper-division courses in one of the following areas: political science, philosophy, English, psychology, sociology, geography, or history  8

Foreign Language or Research Methods Requirement  15-20
Electives  66-74

Total (minimum requirement)  192

English

Professors  Baker, Bracher, Cantelupe (University), N. Cary, Harden, Hughes, Hussman (chair), Pacernick, Swanson, Whissen
Associate Professors  C. Cary, Correale, Gleason, Howard, Limouze, Maner, Pringle, Sammons
Assistant Professors  Mollierno (WOBC), Snyder (WOBC)
Adjunct Assistant Professor  Roller
Instructor  Bricker (WOBC)

The English major is designed to provide a balanced program of elementary and advanced work in English and American literature, English language and linguistics, and writing. The program offers the opportunity for systematic study of a major humanistic discipline as well as sound professional training suitable for those planning high school teaching, a business career, or graduate work. The program also provides an excellent background for students interested in entering professional schools.

In choosing electives, students should try to elect, in consultation with the departmental adviser, courses that will supplement or complement their major interest and that will form a coherent unit of study. English majors must also satisfy a foreign language or research methods requirement. Students may satisfy this requirement by completing the second-year course (202) in a foreign language, by equivalent proficiency examination, or by courses chosen from the research methods core.
Candidates for certification in high school and junior high school English teaching may earn a Bachelor of Arts degree by completing the language or research methods requirement described above and distributing their English courses as outlined in the program of study for English with certification. In addition, the B.A. with certification student must take the professional education courses prescribed by the College of Education and Human Services. Early in their programs, all English majors seeking certification should review their programs with a teacher certification adviser in the College of Education and Human Services to ensure fulfillment of the necessary requirements for certification.

English Honors Program

The honors program in English is designed to encourage and recognize superior academic accomplishments by undergraduate English majors. With the approval of the chair of the English department and the departmental honors adviser, a student may be admitted to the English honors program before the beginning of the senior year. A student may be recommended for admission to the English honors program by any member of the English department faculty, or the student may petition to enter the program. To be admitted to the program, a student must meet standards of eligibility.

Upon entering the program, the student will choose, as senior honors tutor, any member of the English department faculty of professional rank who agrees to direct the student’s honors project. The tutor will be officially assigned to the student by the department and the departmental honors adviser. While working on the honors project, the student will consult regularly with the tutor by enrolling in ENG 498 and 499.

The honors project will consist of work during at least two successive academic quarters. Credit for this work will be noted by grades for ENG 498 and 499. The project will culminate in the writing of an honors thesis or project report. This thesis or report will be evaluated by a committee comprised of the student’s honors tutor, the departmental honors adviser, and one other English department faculty member of professional rank.

Certificate Program in Professional Writing

A certificate in professional writing is available to any student who successfully completes twenty hours of approved writing courses. Please contact the departmental office for further information.

Certificate Program in TESOL

A certificate program in Teaching English to Speakers of Other Languages is offered by the Department of English in cooperation with the College of Education and Human Services. Included are courses in English and comparative language studies, TESOL methods, and a practicum. Interested students should contact the department chair.

Degree Requirements—English

Bachelor of Arts Degree

General Education Requirements 47

English Major Requirements 52

ENG 255, 256 8

ENG 351 or 352; 353 or 354; 355 or 356 or 357; and one other course from 351 through 357 group 16

At least three of the following courses, each from a different category:

ENG 410, 420, 430, 440, 450, 460, 470 12

Three additional 300- and/or 400-level courses 12

One course in linguistics (ENG 480 or 497) 4

Foreign Language or Research Methods Requirement 20-24

Electives 69-73

Total 192

Degree Requirements—English with Certification

Bachelor of Arts Degree

English Major Requirements 52

ENG 203 or CPL 201, 202, 203 (General Education, Area Three B—one course) 4

ENG 255 4

ENG 341 4

ENG 480 or 497 4

ENG 351 or 352; 353 or 354; 355, 356, or 357, and one other course from 351 through 357 16

At least three of the following (each from a different category):

ENG 410, 420, 430, 440, 450, 460, 470 12

An elective in literature at the 300 or 400 level 4

An elective in composition or linguistics 4

Professional Education Requirements 45-47

ED 211, 212, 213, 214, 215, 216, 217 14

ED 327, 404, 432, 464 12

ED 322** 3

ED 440, 429 16-18
Related Requirements

PSY 111 (General Education, Area Three A—one course) 4
MTH 304* 4
COM 101, 102 (General Education, Area Three B—two courses) 6

Additional General Education Requirements 33

ENG 111*, 112 8
Area Two 12
Area Three A (two courses) 8
Area Three A or B 5
Foreign Language or Research Methods Requirement 20-24

Electives 22-28

Second or supporting field suggested
Recommended: HST 321, 322; or HST 475, 480

Total (minimum requirement) 192

*May be waived with proficiency examination.
**Participation experiences required.

Geography

Professors: Oshiro, Ray
Associate Professors: Clemens, Mazey (chair)
Assistant Professor: Wetter (WOBC)

The Department of Geography seeks to provide students with an awareness and understanding of the spatial organization and distribution of phenomena in the physical and human world. Geography has a broad interdisciplinary base ranging from natural to behavioral sciences. Such topics as climatology, landform analysis, settlement theory, spatial interaction, and urban morphology indicate the breadth of contemporary geography.

The geographer must take account of historical and cultural processes including people’s diverse attitudes toward the earth and how these have changed through time. In addition, the geographer must consider economic and social processes which influence such geographical conditions as industrial location, population distribution, urban spatial structure, settlement patterns, and the use of resources. Also, the geographer must be able to employ the data of natural science, or be intimately concerned with the data of social science and the complexities of philosophy.

The undergraduate major in geography thus includes the study of cultural, economic, physical, and regional geography, as well as cartography, quantitative methods, and field work. Backgrounds in the natural and social sciences, humanities, statistical methods, and computer programming are useful to the geography major.

The geography program provides options which allow students to select a curriculum best suited to their particular interests or future plans. Depending on their interests or plans, geography majors must select a program of courses leading to a Bachelor of Arts degree or Bachelor of Science degree.

The Bachelor of Arts degree in geography fosters an understanding of the processes of formation and the characteristics of a landscape. A broad spectrum of courses in geography and related fields helps the student delineate, by data collection and analysis, the processes which create a landscape. Students select an area of study from physical geography, resource management, urban-economic geography, or urban planning. Study of a foreign language is part of this degree program.

The objective of the program of courses leading to a Bachelor of Science degree in geography is to develop competence in the area of technical skills and logic in accordance with the change in emphasis to a more spatial-behavioral orientation. Competence in technical skills and logic is critical as more geography majors seek employment in government and business. However, an understanding of the traditional geographic perspective is an important part of the education of a geographer. To achieve these goals, courses in physical, economic, and social geography, cartography, photogrammetry, and remote sensing, and urban planning are emphasized in the program. These courses are complemented by courses in mathematics, philosophy, and computer science.

Geography may be selected as an academic major or as a secondary teaching major in social science, as part of an earth science program, or as a part of an elementary teaching major. Geography courses may satisfy both General Education requirements and advanced course electives in many programs. Students majoring in geography may qualify for certification at the secondary level by meeting the minimum requirements in professional education courses essential to certification by the state of Ohio. Students interested in this option should consult a records analyst in the College of Education and Human Services for information concerning minimum requirements.

Because sequential requirements and prerequisites exist in both the professional and academic components of each program from which courses are selected, the student is strongly urged to consult an adviser before registering.

The department participates in the university’s dual major program. For further details, see the department chair.

Geography majors may participate in the department’s internship program. The internship is designed to provide practical experience for majors in geography as they pursue the baccalaureate. Such experience is considered critical for many
students, especially those intending to seek employment immediately following completion of the B.A. or B.S. degree. Students interested in the internship should contact the departmental coordinator of the program.

Geography Honors Program
The Department of Geography encourages outstanding academic work through the honors program established for superior students who wish to work on a geographic problem of their own definition. Applicants must be majors in geography, have senior standing with thirty-six hours of courses in geography to their credit, and meet certain minimum grade point averages. Candidates are required to complete an honors project under the direction of a member of the geography faculty. Successful completion of the project, including written and oral project reports, carries four academic credits and entitles the student to graduate with formal recognition of honors in geography. Geography honors students are encouraged to participate in the University Honors Program. Interested students should contact the departmental coordinator of the program.

Cooperative Education Program
Cooperative education experience is also available to qualified geography majors beginning in their sophomore year in both the public and private sectors. Cooperative job opportunities exist in the areas of cartography, community development, meteorology, remote sensing, and urban planning. Cooperative education offers students a means of partially financing their education while gaining career-oriented experiences.

Students interested in cooperative education opportunities should contact the departmental coordinator of the program.

Certificate Programs
A certificate program in Cartography, Photogrammetry, and Remote Sensing is offered by the Department of Geography, providing extended training for those desiring to complement a major field of study with such skills. Through six courses, the student will study the built environment and the various techniques used to describe, evaluate, and guide spatial and physical change. Students will acquire skills in defining needs and goals, in assessing development patterns and policies, and in evaluating methods for implementing planned changes. The program requires the completion of six courses which provide participants with information on the planning function and the development of research and analytical abilities for those preparing for work in, or who are currently engaged in, city, urban, regional, environmental, or resource planning. Upon completion of these courses, each participant will present a portfolio of materials for faculty review and, in addition, present an oral defense of his/her research project before a faculty review committee.

Students interested in the certificate program should contact the department chair.

Degree Requirements—Geography
Bachelor of Arts Degree

General Education Requirements 47

Departmental Core Requirements 26
GEO 101, 102, 103 12
GEO 285 5
GEO 365 5
One course in regional geography 4

Departmental Major Requirements 32-33

Related Course Requirements 24

Foreign Language or Research Methods Requirement 20

Electives 41-42

Should be selected in consultation with the departmental adviser to complement and support the area of concentration

Total 192

Geography Major Curricula
Physical Geography

Physical Geography Major Requirements 33
GEO 230, 261 8
GEO 271, 322 8
GEO 331, 445 9
Two appropriate geography courses numbered 300 or above 8

Related Course Requirements 24

Approved courses numbered 200 and above (not to exceed four courses in one department) in computer science, engineering, geological sciences, mathematics, and physics
Resource Management

Resource Management Major Requirements 32
GEO 230, 253, 261, 271 16
GEO 322 4
GEO 302 4
Two appropriate geography courses numbered 300 or above 8

Related Course Requirements 24
Approved courses numbered 200 and above (not to exceed four courses in one department) in biological sciences, business, computer science, economics, engineering, geological sciences, history, marketing, political science, religion, and urban affairs

Urban-Economic Geography

Urban-Economic Geography Major Requirements 32
GEO 242, 253 8
GEO 261, 271 8
GEO 275, 302 8
Two appropriate geography courses numbered 300 or above 8

Related Course Requirements 24
Approved courses numbered 200 and above (not to exceed four courses in one department) in computer science, economics, history, marketing, mathematics, political science, psychology, sociology, and urban affairs

Urban Planning

Urban Planning Major Requirements 32
GEO 242, 253, 275 12
GEO 261, 376 8
GEO 477 4
Two appropriate geography courses numbered 300 or above 8

Related Requirements 24
Approved courses numbered 200 and above (not to exceed four courses in one department) in anthropology, art, biological sciences, chemistry, computer science, economics, education, engineering, geological sciences, history, marketing, mathematics, political science, psychology, social work, sociology, and urban affairs

Degree Requirements—Geography

Bachelor of Science Degree

General Education Requirements 47

Departmental Core Requirements 26
GEO 101, 102, 103 12
GEO 285 5
GEO 365 5
One course in regional geography 4

Departmental Major Requirements 36-37

Physical Component
Three of the following (twelve hours):
GEO 230 4
GEO 322 4
GEO 331 4
GEO 432 4

Economic-Social Component
Two of the following (eight hours):
GEO 253 4
GEO 302 4
GEO 271 4

Skills Component
Two of the following (eight or nine hours):
GEO 261 4
GEO 362 4
GEO 445 5
GEO 446 4
GEO 463 4

Planning Component
Two of the following (eight hours):
GEO 275 4
GEO 376 4
GEO 477 4

Related Course Requirements 30

Mathematics
STT 164 3
STT 165 1
STT 265 3
STT 266 1
MTH 224 3
MTH 226 3

Philosophy
Two of the following (eight hours):
PHL 115 4
PHL 471 4
PHL 472 4

Computer Science
Two of the following (seven or eight hours):
CS 141 4
CS 142 4
CS 300 4
CS 210 3

Electives 52-53
Should be selected in consultation with the departmental adviser to complement and support the area of concentration

Total 192
Minor in Geography

The minor in geography is designed to provide a coherent program of courses for students in other disciplines who wish to supplement their knowledge and skills with geographic analytical skills and perspectives. The student electing a minor in geography may choose one of two concentrations: physical geography or urban geography. A minimum grade point average of 2.5 is required in the minor.

Minor in Physical Geography

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 230</td>
<td>4</td>
</tr>
<tr>
<td>GEO 261</td>
<td>4</td>
</tr>
<tr>
<td>GEO 275</td>
<td>4</td>
</tr>
<tr>
<td>GEO 285</td>
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<tr>
<td>GEO 322</td>
<td>4</td>
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<tr>
<td>GEO 331</td>
<td>4</td>
</tr>
<tr>
<td>GEO 365</td>
<td>5</td>
</tr>
<tr>
<td>GEO 492</td>
<td>2</td>
</tr>
</tbody>
</table>

Minor in Urban Geography

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 242</td>
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</tr>
<tr>
<td>GEO 253</td>
<td>4</td>
</tr>
<tr>
<td>GEO 275</td>
<td>4</td>
</tr>
<tr>
<td>GEO 285</td>
<td>5</td>
</tr>
<tr>
<td>GEO 365</td>
<td>5</td>
</tr>
<tr>
<td>GEO 376</td>
<td>4</td>
</tr>
<tr>
<td>GEO 477</td>
<td>4</td>
</tr>
<tr>
<td>GEO 492</td>
<td>2</td>
</tr>
</tbody>
</table>

History

**Professors** Becker, Berry, Dorn, Gordon, Spiegel

**Associate Professors** Arbagi, Carlson (WOBC), Merram, Nolan, Sealander, Spelter (chair), Yuan

**Assistant Professors** Swann, Wachtell, Wood (WOBC)

The undergraduate major in history enables a student to gain a broad liberal arts education. In meeting the specific requirements of the major, students are encouraged to further their knowledge of the principal developments and problems of history and to enrich their understanding of historical evolution through research and writing. Through complementary elective courses in other departments, which add depth and variety, students enlarge their historical perspective. Through exposure to a broad spectrum of human experience in the past and present, students should come to an understanding of the self and of their relationship to other human beings and to the structure of society. The history major can thus be used generally by the student who wishes to be a useful member of the community, and specifically by the student who seeks a career in such fields as teaching, journalism, library and archival work, government, politics, law, and business. The departmental program also provides a sound basis for students planning to pursue study at the graduate level.

The student who declares history as a major is assigned an academic adviser who will assist with academic routines, the selection of individual courses, and the development of undergraduate and postgraduate goals. Students interested in careers in law, public service, journalism, or business should consult with the adviser about departmental programs particularly geared to these fields.

Majors are expected to maintain at least a 2.0 grade point average in history for graduation.

**History Honors Program**

The honors program enables qualified students to carry out independent research under the guidance of a faculty sponsor. Departmental honors at graduation are awarded on the basis of the student’s completion of the following: at least one interdisciplinary honors seminar, HST 400 (with a grade of A or B); a 3.5 grade point average in history and a 3.0 average in overall course work; and a Bachelor of Arts degree in history. In exceptional cases, certain requirements may be waived by a vote of the departmental curriculum committee. Interested students should consult with the departmental adviser.

**Placement Examinations**

Students who feel that their background and previous experience equal the introductory courses either in American or European history or both may take the appropriate qualifying examination. A sufficient grade in the examination will lead to eight or sixteen history credit hours. Students should contact the department for details.

**Cooperative Education Program**

A cooperative education program is available to qualified history majors in both the private and public sectors. Cooperative education job opportunities may be arranged in government, business, industry, and a variety of private service organizations. Cooperative education offers students a means of partially financing their education while gaining a career-related experience. A limited number of elective course credits will be granted to students who satisfactorily complete their programs. Contact the department chair or undergraduate adviser for further information.
Degree Requirements—History
Bachelor of Arts Degree

General Education Requirements 47

Degree Requirements—History
Bachelor of Arts Degree

Departmental Requirements 52

Professional courses: HST 300, 498 8
Twelve hours in one of the following:
- Three areas and eight hours in each of the
  remaining areas:
  - U.S. history (upper division) 8-12
  - European history (upper division) 8-12
  - Other history courses (upper division) 8-12

History electives 16

Related Requirements 24

Twelve hours in one of these fields: anthropology,
art, classics, economics, literature, geography,
music, philosophy, political science, religion, or
sociology.

Foreign Language or
Research Methods Requirement 20-24

Electives 45-49

Total 192

Modern Languages

Professors Horn, Matual, Racevskis

Associate Professors Garrison, Hye, Park,
Whissen (chair)

Assistant Professor Cannon

Adjunct Assistant Professor Pittman (WOBC)

The contributions of foreign language study to
international understanding and world peace and
the value of language literacy within the framework
of liberal education have long been recognized. The
foreign language program seeks to combine oral
and written proficiency with knowledge of the culture
and literary heritage of societies other than our own.
The department provides excellent preparation for
entrance into many crucial and challenging fields,
including the diplomatic corps, foreign trade,
government, business, industry, and teaching.

Students should be aware that knowledge of a
foreign language alone is often insufficient for many
careers. Therefore, the goal of the language major
should be to combine knowledge of a language with
another discipline or skill. While a second foreign
language is not required, the department strongly
recommends it.

The Department of Modern Languages offers
majors leading to the Bachelor of Arts degree in
French, German, Spanish, and modern languages.
The student who seeks teacher certification in these
languages may work toward the Bachelor of Science
in Education degree, available through the College
of Education and Human Services, or may earn a
Bachelor of Arts degree with certification, fulfilling
both the requirements of the language major and the
professional education requirements of the College
of Education and Human Services.

In addition to major and minor programs in
French, German, and Spanish, the department offers
basic courses in Danish, Italian, Japanese, Polish,
Portuguese, Russian, comparative literature, foreign
cultures, literature in translation, and linguistics.

Modern Languages,
Honors Program

Outstanding language majors are encouraged
to participate in the departmental honors program.
For details, please consult with the chair.

Placement and Proficiency

Students are responsible for placing themselves
on the language level at which they can perform
satisfactorily.

For students who have had no foreign language
or one year of study in high school, the 101 course
level is recommended. Students who have had two
or three years of foreign language in high school
should take the 201 level. For students with four
years of foreign language study, the 321 and/or 341
courses are suggested.

Students are not obligated to follow this
placement scale. However, if they are uncertain
about the appropriate placement level, they may
make arrangements with the modern languages
department to take a test to determine their level of
capability.

Proficiency credit may be earned in two areas:
300-level conversation courses (four credit hours),
and 300-level composition courses (eight credit
hours).

Degree Requirements—French
Bachelor of Arts Degree

General Education Requirements 47

Departmental Requirements 54

FR 201, 202, 203; 301, 302 20
FR 321, 322, 341, 342 16
FR 361 2
French electives (300- and 400-level courses) 16
Degree Requirements—German
Bachelor of Arts Degree

General Education Requirements 47

Departmental Requirements 52
GER 201, 202, 203; 301, 302 20
GER 321, 322, 341, 342 32
German electives (300- and 400-level courses) 16

Related Requirements 24
CPL 201, 202, 203, 210 8
(Students should take at least two courses.)
ML 111, 112, 113, 114, 115 8
(Students should choose the culture course related to their field plus at least one other culture course.)
ML 211, 212, 213, 214, 215 8
(Students should choose at least two literature courses in translation outside their own field.)

Electives 69

Total 192

Degree Requirements—Spanish
Bachelor of Arts Degree

General Education Requirements 47

Departmental Requirements 54
SPN 201, 202, 203; 301, 302 20
SPN 321, 322, 341, 342 16
SPN 331, 332, 361 10
Spanish electives (400-level courses) 8

Related Requirements 24
CPL 201, 202, 203, 210 8
(Students should take at least two courses.)
ML 111, 112, 113, 114, 115 8
(Students should choose the culture course related to their field plus at least one other culture course.)
ML 211, 212, 213, 214, 215 8
(Students should choose at least two literature courses in translation outside their own field.)

Electives 49

Total 192

Degree Requirements—Modern Languages
Bachelor of Arts Degree

The degree in modern languages is a combination of at least three languages, thirty-six credit hours in a primary field and thirty-six credit hours in a secondary field. A primary field is a concentration in French, German, or Spanish; a secondary field is any combination of languages the department offers other than the one selected for the primary field, but at least one of the secondary languages must be pursued through the 203 level. First-year courses will not be counted toward the primary field but may be used to fulfill the requirements for the secondary field. The primary field must include at least two courses at the 400 level.

Departmental Requirements (at least three languages) 72

Primary language (example)
FR 201, 202, 203; 301, 302; 321, 322; 403, 422 36

Secondary language (example)
SPN 101, 102, 103; 201, 202, 203 24
GER 101, 102, 103 12

Related Requirements 24
CPL 201, 202, 203, 210 8
(Students should take at least two courses.)
ML 111, 112, 113, 114, 115 8
(Students should choose the culture course related to their field and at least one other culture course.)
ML 211, 212, 213, 214, 215, 216 8
(Students should choose at least two literature courses in translation outside their own field.)

Electives 49

Total 192
Modern Language Minors
French, German, Spanish
A minor in a foreign language greatly enhances a student’s career prospects. Minors are offered in French, German, and Spanish and require a minimum of thirty-two credit hours selected from courses at the 200 level or above (excluding LI 471, FR 361, and SPN 361). A minor in Spanish, for example, might consist of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPN 201</td>
<td>4</td>
</tr>
<tr>
<td>SPN 202</td>
<td>4</td>
</tr>
<tr>
<td>SPN 203</td>
<td>4</td>
</tr>
<tr>
<td>SPN 301</td>
<td>8</td>
</tr>
<tr>
<td>SPN 321</td>
<td>4</td>
</tr>
<tr>
<td>SPN 322</td>
<td>4</td>
</tr>
<tr>
<td>SPN 341</td>
<td>4</td>
</tr>
<tr>
<td>SPN 342</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
</tr>
</tbody>
</table>

Motion Pictures
See Theatre Arts

Music
Professors: Steinohrt, Wurtz
Associate Professors: Atsalis, Bland, Foster, Johnson (chair), Larkowski, Magill, Olds, Poff, Young
Assistant Professors: Lane, Laws

The Department of Music offers a four-year curriculum designed for the serious student who wishes to pursue a career in music. As a member of the National Association of Schools of Music, the department has designed the requirements for entrance and graduation in accordance with the published regulations of that association. The Bachelor of Music degree is offered with majors in applied music, music education, music theory, music history and literature, and music composition; the Bachelor of Arts degree is offered with a major in Music. A Master of Music degree with a major in music education is also offered. Because of the highly individualized nature of the various programs, the student is required to consult with an adviser in planning a major program.

All students in the university, as well as members of the community, are eligible to participate in the performing organizations. Some groups require individual auditions; prospective members should consult the various conductors to arrange auditions. Membership in the University Band; Orchestra, Chorus, or other authorized performing group is required of all music majors throughout their period of study, as described in the curricular outlines. The following instrumental groups are available: Orchestra, Symphony Band, Concert Band, Brass Choir, Collegium Musicum, and Jazz Ensemble. Choral groups include the University Chorus and Chamber Singers. Students majoring in other academic areas and members of the community may also elect music courses especially designed for the nonmusic major.

In addition to fulfilling university admissions procedures, the prospective music major must also complete a departmental application for an audition, perform a satisfactory audition in a major performance area, and meet with an assigned adviser from the music faculty for counseling and registration. Placement in applied music will be determined at the end of the first quarter of degree credit study. Transfer students must submit a transcript of all previous work in addition to completing the above steps. A minimum of one year of full-time study will be required of any transfer student working toward a degree.

Because of the cost of individual instruction, special fees are charged for applied music. Fees for applied music are $43 for one half-hour lesson per week or $85 for a one hour lesson per week payable quarterly. A rental fee of $5 is charged for use of university-owned instruments in class instruction.

Students enrolled in academic music courses are required to attend recitals, concerts, and other approved performances. A schedule of acceptable performances is published quarterly. Bachelor of Music students are required to attend a minimum of eight performances each quarter of residence. At least four of these performances must be faculty recitals. Bachelor of Arts students are required to attend a minimum of four performances each quarter of residence. At least two of these performances must be faculty recitals.

A progressive course of study based on four levels of technical proficiency, musicianship, and repertoire has been developed in all areas of applied music. Solo recital performances are also required of music majors. For information regarding applied music requirements, the student should refer to the Applied Music Policy Statement, which includes details of formal recital requirements.

All music majors must pass a keyboard proficiency examination, details of which are set out in the document General Keyboard Requirements. Students should consult regularly with their applied music instructors and advisers to ensure proper progress through the various requirements.

All music degree programs require a minimum of 192 credit hours for graduation. A detailed, four-year curriculum outline for each major program is available in the Department of Music office.

Degree Requirements—Applied Music

Bachelor of Music Degree

The department offers majors in the following areas of performance: piano, voice, organ, violin, viola, violoncello, string bass, flute, oboe, clarinet, bassoon, saxophone, trumpet, horn, trombone,
euphonium or baritone horn, tuba, percussion, classical guitar, and harp. With departmental permission, students may major in fields other than those listed. Students must study continuously in their chosen disciplines until all graduation requirements are met, including satisfactory public performance of a solo half recital during the junior year and solo full recital during the senior year.

The department also offers an emphasis in piano pedagogy. During the senior year, each student in this curriculum will perform in student recitals two or three times for a total of twenty-five to thirty minutes. With the approval of the studio teacher and the applied music board, a student may present a half recital or a full recital in lieu of this requirement.

To be eligible for the Bachelor of Music degree, the applied major must have a minimum cumulative grade point average of 3.0 in the major performing medium and a 2.0 in all other required music courses.

### General Education Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 101, 102, 103, 201, 202, 203</td>
<td>12</td>
</tr>
<tr>
<td>MUS 151, 152, 153, 251, 252, 253</td>
<td>6</td>
</tr>
<tr>
<td>MUS 121, 122, 311, 312, 313</td>
<td>12</td>
</tr>
</tbody>
</table>

### Departmental Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>MUS 120, 130, 220, 230 or 240</td>
<td>48</td>
</tr>
<tr>
<td>MUS 140, 150, 170, 250 or 260</td>
<td>48</td>
</tr>
</tbody>
</table>

### Major Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 301, 302, 303 (voice majors may substitute 401, 402, 403)</td>
<td>9</td>
</tr>
<tr>
<td>HST 121*, 122*</td>
<td>7</td>
</tr>
<tr>
<td>Spanish, French, or German</td>
<td></td>
</tr>
</tbody>
</table>

(Students other than voice majors able to pass a reading examination in one of these languages may substitute elective hours for this requirement.)

### Performance Area Requirements

<table>
<thead>
<tr>
<th>Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice</td>
<td>92</td>
</tr>
<tr>
<td>MUS 441, 442, 455, 456, 457</td>
<td>8</td>
</tr>
<tr>
<td>MUS 420</td>
<td>9</td>
</tr>
<tr>
<td>MUS 261, 262, 263</td>
<td>6</td>
</tr>
<tr>
<td>MUS 110</td>
<td>48</td>
</tr>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>Choral Ensemble</td>
<td>9</td>
</tr>
<tr>
<td>MUS 205 or appropriate MUS 481</td>
<td>3</td>
</tr>
<tr>
<td>MUS 155, 156, 157</td>
<td>3</td>
</tr>
<tr>
<td>MUS 100 or 255, 256, 257</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piano</td>
<td>84</td>
</tr>
<tr>
<td>MUS 401, 402, 403</td>
<td>9</td>
</tr>
<tr>
<td>MUS 447, 448, 451, 452, 453</td>
<td>15</td>
</tr>
<tr>
<td>MUS 100</td>
<td>48</td>
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<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>MUS 205</td>
<td>3</td>
</tr>
<tr>
<td>MUS 105 or 205</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organ</strong></td>
<td></td>
</tr>
<tr>
<td>MUS 401, 402, 403, 441, 442</td>
<td>11</td>
</tr>
<tr>
<td>MUS 160</td>
<td>48</td>
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<tr>
<td>MUS 110</td>
<td>6</td>
</tr>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>Choral Ensemble</td>
<td>6</td>
</tr>
<tr>
<td>MUS 205</td>
<td>3</td>
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</table>

### Electives

6

<table>
<thead>
<tr>
<th>Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strings (violin, viola, violoncello, or double bass)</td>
<td>88</td>
</tr>
<tr>
<td>MUS 401, 402, 403, 421, 422</td>
<td>13</td>
</tr>
<tr>
<td>MUS 180, 190, 200 or 210</td>
<td>48</td>
</tr>
</tbody>
</table>

Secondary string study (one quarter of private lessons in each of the other string instruments excluding the major)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>MUS 205</td>
<td>3</td>
</tr>
<tr>
<td>MUS 135</td>
<td>12</td>
</tr>
<tr>
<td>MUS 155, 156, 157</td>
<td>3</td>
</tr>
<tr>
<td>MUS 100 or 255, 256, 257</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Woodwinds</strong></td>
<td>91</td>
</tr>
<tr>
<td>MUS 401, 402, 403, 421, 422, 441, 442</td>
<td>15</td>
</tr>
<tr>
<td>MUS 120, 130, 220, 230 or 240</td>
<td>48</td>
</tr>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>MUS 115</td>
<td>9</td>
</tr>
<tr>
<td>MUS 135</td>
<td>3</td>
</tr>
<tr>
<td>MUS 205</td>
<td>3</td>
</tr>
<tr>
<td>MUS 155, 156, 157</td>
<td>3</td>
</tr>
<tr>
<td>MUS 100 or 255, 256, 257</td>
<td>3</td>
</tr>
</tbody>
</table>

Secondary woodwind study (one quarter of private lessons in each of the other woodwind instruments excluding the major)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>MUS 205</td>
<td>3</td>
</tr>
<tr>
<td>MUS 235</td>
<td>3</td>
</tr>
<tr>
<td>MUS 125, 135, 205 or 235</td>
<td>2</td>
</tr>
</tbody>
</table>

Secondary brass study; one or two instruments

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 155, 156, 157</td>
<td>3</td>
</tr>
<tr>
<td>MUS 100 or 255, 256, 257</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percussion</strong></td>
<td>94</td>
</tr>
<tr>
<td>MUS 401, 402, 403, 421, 422, 441, 442</td>
<td>15</td>
</tr>
<tr>
<td>MUS 270</td>
<td>48</td>
</tr>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>MUS 115</td>
<td>12</td>
</tr>
<tr>
<td>MUS 125</td>
<td>3</td>
</tr>
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<td>MUS 135</td>
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</tr>
<tr>
<td>MUS 205</td>
<td>3</td>
</tr>
<tr>
<td>MUS 155, 156, 157</td>
<td>3</td>
</tr>
<tr>
<td>MUS 100, or 255, 256, 257</td>
<td>3</td>
</tr>
<tr>
<td>MUS 125, 205 or 235</td>
<td>2</td>
</tr>
<tr>
<td>Major Requirements</td>
<td>32-35</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------</td>
</tr>
<tr>
<td>MUS 155, 156, 157</td>
<td>2-3</td>
</tr>
<tr>
<td>(those in piano and organ concentrations do not take MUS 155)</td>
<td></td>
</tr>
<tr>
<td>Humanities or HST 121*, 122*</td>
<td>8</td>
</tr>
<tr>
<td>ED 211, 212, 213, 214, 215, 216, 217, 221, 222, 223</td>
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<tr>
<td>ED 440, 442</td>
<td>4</td>
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<tr>
<td>ED 432, 464</td>
<td>6</td>
</tr>
<tr>
<td>ED 429</td>
<td>12-14</td>
</tr>
</tbody>
</table>

One of the following programs 77-93

<table>
<thead>
<tr>
<th>Band or Orchestral Instrument Concentration</th>
<th>82</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>22</td>
</tr>
<tr>
<td>MUS 255, 256, 257 or 100</td>
<td>3</td>
</tr>
<tr>
<td>MUS 105</td>
<td>3</td>
</tr>
<tr>
<td>MUS 115 or 135</td>
<td>11</td>
</tr>
<tr>
<td>MUS 145, 146</td>
<td>2</td>
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<tr>
<td>MUS 205</td>
<td>3</td>
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<tr>
<td>MUS 215, 216, 217, 224, 225, 226; 227, 228, 229, 231</td>
<td>10</td>
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<td>MUS 223, 323, 324, 329</td>
<td>12</td>
</tr>
<tr>
<td>MUS 335, 336</td>
<td>7</td>
</tr>
<tr>
<td>MUS 421, 422</td>
<td>4</td>
</tr>
<tr>
<td>Music electives</td>
<td>5</td>
</tr>
</tbody>
</table>

Instrumental laboratory ensemble

**Degree Requirements—Music Education**

**Bachelor of Music Degree**

Students who major in music education may elect either an instrumental or a vocal-general music curriculum. Upon completion of the requirements of the Ohio Board of Education, the student receives the Ohio Special Certificate for teaching music. To be eligible for the Bachelor of Music degree, the music education major must have a minimum cumulative grade point average of 3.0 in required music education courses and a 2.0 grade point average in all other required music courses. An overall minimum cumulative grade point average of 2.25 is required.

Three hundred hours of observation/participation experiences are required prior to student teaching.

Students majoring in music education must fulfill a mathematics requirement by attaining an ACT score of nineteen or completing either MTH 127 or 304.

During the senior year each student will perform in student recitals two or three times for a total of twenty-five to thirty minutes. With the approval of the studio teacher and the applied music board, a student may present a half recital or a full recital in lieu of this requirement.

---

### General Education Requirements

**Departmental Requirements** 47

| MUS 101, 102, 103, 201, 202, 203 | 12 |
| MUS 151, 152, 153, 251, 252, 253 | 6 |
| MUS 121, 122, 311, 312, 313 | 12 |

**Music Electives**

Voice Concentration with Piano

Secondary (if piano is concentration) 22

Secondary (if voice is concentration) 8

MUS 105 | 3

MUS 105 or 195 | 8

MUS 215, 224, 227, 231 | 4

MUS 261, 262, 263 | 6

MUS 328, 329, 332 | 10

MUS 335, 337 | 7

MUS 421, 422 | 4

Music electives | 5

Choral laboratory ensemble
Degree Requirements—Music Theory

Bachelor of Music Degree

Students may pursue a Bachelor of Music degree with a major in music theory. This is not a terminal degree and students pursuing this curriculum should expect to continue at the graduate level. Therefore, all students considering this program should consult with the coordinator of music theory before entering the program.

Admission to this program requires a cumulative grade point average of 3.0 in MUS 101, 102, 103 and MUS 151, 152, 153; students intending to pursue a degree in music theory will be placed in the Music: Unspecified category until MUS 103 and 153 have been completed.

In order to meet graduation requirements with a major in music theory, the student must complete performance level 3A in the principal performance area and pass all keyboard proficiency requirements. A 3.0 cumulative grade point average must be maintained in all required music theory courses and a 2.0 in all other required music courses. Senior students will be required to complete a senior project. This requirement may be met through a scholarly lecture in the field of music theory and may include the presentation of original compositions and performance. Exception to any requirement must be approved by the department chair and the appropriate department faculty committee.

General Education Requirements 47

Departmental Requirements 30

MUS 101, 102, 103, 201, 202, 203 12
MUS 151, 152, 153, 251, 252, 253 6
MUS 121, 122, 311, 312, 313 12

Major Requirements 90-91

MUS 155, 156, 157 (those in piano or organ concentration do not take MUS 155) 2-3
MUS 301, 302, 303, 314 12
MUS 335, 337 or 338, 371, 372, 381, 382 19
MUS 401, 402, 403, 421, 422, 423 15
MUS 424, 425, 481 12
Ensemble (at least one hour per quarter) 12
French or German (three courses in one language) 12
Electives (those in vocal concentration must take MUS 261, 262, 263) 6

One of the following performance concentrations 23-31

Keyboard Concentration 23
Concentration 18
Secondary (at least one hour each in voice, woodwinds, string, brass, percussion) 5

Degree Requirements—Music History and Literature

Bachelor of Music Degree

Students may pursue a Bachelor of Music degree with a major in music history and literature. This is not a terminal degree, and students pursuing this curriculum should expect to continue at the graduate level. Therefore, all students considering this program should consult with the coordinator of music theory and literature before entering the program.

Admission to this program requires a cumulative grade point average of 3.0 in MUS 121 and 122; students intending to pursue the music history and literature major will be placed in the Music: Unspecified category until MUS 103, 153, and 122 have been completed.

In order to meet graduation requirements with a major in music history and literature, the student must complete level 3A in the principal performance area and pass all keyboard proficiency requirements. A 3.0 cumulative grade point average must be maintained in all required music history and literature courses and a 2.0 in all other required music courses. Senior students are required to complete a senior project, which will normally consist of an extensive research project.

General Education Requirements 47

Departmental Requirements 30

MUS 101, 102, 103, 201, 202, 203 12
MUS 151, 152, 153, 251, 252, 253 6
MUS 121, 122, 311, 312, 313 12
Major Requirements 88-89

MUS 155, 156, 157 (those in keyboard concentrations do not take MUS 155) 2-3
MUS 314 3
MUS 301, 302, 303 (MUS 421, 422, 423 may substitute for two courses) 9
MUS 401, 402, 403 9
Music Literature (minimum of nine hours from MUS 331, 332, 333, 411, 412, 413) 15
Ensemble (minimum of six hours in University Chorus, Chamber Singers, Band, or Orchestra) 12
Foreign Language (two years French, German, or Latin) 20
Electives (those in vocal concentration must take MUS 261, 262, 263) 12
MUS 481 (senior project) 6
One of the following performance concentrations 24
Keyboard Concentration 24
Concentration 18
Secondary (private or class instruction) 6
Nonkeyboard Concentration 24
Concentration 18
Keyboard 6

Degree Requirements—Music Composition

Bachelor of Music Degree

Students may pursue a Bachelor of Music degree in music composition. This is not a terminal degree, and students pursuing this curriculum should expect to continue study at the graduate level. Therefore, all students considering this program should consult with the coordinator of music theory and literature before entering the program.

Admission to this program requires a cumulative grade point average of 3.0 in MUS 101, 102, 103 and 151, 152, 153; students intending to pursue a degree in music composition will be placed in the Music: Unspecified category until MUS 103 and 153 have been completed.

In order to meet graduation requirements with a major in music composition, the student must complete level 3A in the principal performance area and pass all keyboard proficiency requirements. A 3.0 cumulative grade point average must be maintained in all required composition and theory courses and a 2.0 in all other required music courses. Senior students are required to present a thirty-minute recital of original compositions.

General Education Requirements 47

Departmental Requirements 30
MUS 101, 102, 103; 201, 202, 203 12
MUS 151, 152, 153; 251, 252, 253 6
MUS 121, 122, 311, 312, 313 12

Major Requirements 87-88

MUS 155, 156, 157 (those in keyboard concentration do not take MUS 155) 2-3
MUS 301, 302, 303; 335, 337 or 338 16
MUS 371, 372, 373; 381, 382, 383 18
MUS 401, 402, 403; 421, 422, 423 15
MUS 471, 472, 473, 481 12
Ensemble (at least one hour per quarter) 12
Electives (those in vocal concentration must take MUS 261, 262, 263) 12

One of the following performance concentrations 29-31

Keyboard Concentration 29
Concentration 18
Secondary (selected from voice, woodwinds, strings, brass, percussion) 5
Electives 6

Nonkeyboard Concentration 31
Concentration 18
Keyboard 9
Class or private instruction selected from voice, woodwinds, strings, brass, percussion 4

Degree Requirements—Music

Bachelor of Arts Degree

The Bachelor of Arts degree in music is designed for the student who wants to study music but does not necessarily plan a professional career in music. The student will get a much broader, more general education than the student seeking a Bachelor of Music degree. Required courses are kept to a minimum. Consequently, the student must work closely with an adviser in selecting course electives. For graduation, the student must reach level 3A in the principal performance area.

General Education 47

Departmental Requirements 42
MUS 101, 102, 103; 201, 202, 203 18
MUS 151, 152, 153; 251, 252, 253 6
MUS 121, 122, 311, 312, 313 18

Major Requirements 26
MUS 155, 156, 157 (those in keyboard concentration do not take MUS 155) 2-3
MUS 314 3
Applied Music Concentration 12
Music electives 8-9

Related Courses 12

Nine hours to be in one of these fields: Anthropology, art, classics, economics, history, literature, mathematics, philosophy, religion, or sociology.
Music Honors Program

The Department of Music encourages students who have demonstrated superior academic ability to participate in the music honors program. Entrance to this program requires that the student be a junior or senior with a 3.0 cumulative grade point average and a 3.5 grade point average in music. For additional information, contact the department chair.

Philosophy

Associate Professors  Hough (chair), Taylor
Assistant Professors  Beelick, Irvine

The philosophy major is designed to encourage clear and logical thinking about problems which philosophers attempt to solve, to develop the student’s ability for critical evaluation through analysis and appreciation of such attempts, and to increase the student’s cultural experience through acquaintance with the more important philosophic writings.

The forty-four hour requirement in the major affords a considerable measure of flexibility; it enables students to utilize numerous options in other disciplines to prepare for different professional objectives, while also developing a relatively broad understanding of our society and culture. It is to the major’s advantage to pursue courses in other fields since philosophy, by its very nature, is interrelated with all disciplines. Many academic departments include within their curricula courses in the philosophy of their disciplines. Furthermore, philosophical questions can arise during one’s investigation of any specific field.

Because of differences among student interests and the ready availability of electives, each major will follow an individualized program in consultation with an adviser. Such a program permits concentration in cognate fields and encourages exploration and self-discovery.

Since the required courses in philosophy are designed to emphasize basic issues confronting our civilization, the philosophy major is excellent preparation for those who seek a well-rounded liberal education, for those who pursue further training in professional disciplines such as law, medicine, and theology, and for those who plan advanced study in philosophy.

Degree Requirements—Philosophy

Bachelor of Arts Degree

General Education Requirements  47
Departmental Requirements  44
Electives and Related Courses  77-81
Foreign Language or Research Methods Requirement  20-24
Total  192

Political Science and Urban Affairs

Professors  Moore, Smith, Thobaben
Associate Professors  Adams, Funderburk, Hutzel, Jacob, Kotecha, Mazey, Walker (chair)
Assistant Professor  Sirkin

Politics and government are among the oldest and most universal of human activities and institutions. The quest for political institutions and processes capable of effective action, commanding popular support, and able to survive the test of time never ends. Political science is the study of how people have responded and continue to respond to the social need for workable instruments and processes of governance. More specifically, political science is the systematic study of political beliefs, actions as they occur in and outside of formal institutions, and the structures of law, public policy formation, and conflict resolution found in some form in all societies. Political science has a long tradition of philosophical concern for normative questions of social justice, individual political rights, limits on governmental power, obedience to law, and human liberty. More recently, political scientists have begun to apply more rigorous modes of analysis and techniques of empirical investigation in their study of politics and government. Thus, a major in political science offers knowledge of human behavior in a primary area of social life. Further, it trains students in the intellectual skills necessary not only for consideration of issues faced by citizens in the modern state but which also provide excellent preparation for more specialized career education in such fields as law, education, public service, journalism, certain business fields, and communications.

The Department of Political Science and Urban Affairs offers courses on government and politics in the following areas: the United States, Latin America, China and Japan, Eastern and Western Europe, Africa, the Middle East, and the Soviet Union. The department also provides opportunity for study in international relations, law, and organization, political thought; and methods of empirical political research and analysis.
Political science majors must complete a minimum of forty-eight credit hours in political science courses, twenty-four of which must be taken at Wright State University. Majors must take any three of the following courses: PLS 112, 113, 122, 123. Students are encouraged, however, to take all four since they provide basic preparation for all U.S. and non-U.S. advanced courses. Majors are further encouraged to take course work in political thought as foundation in the philosophy of the discipline. Students, especially those who plan to study at the graduate level, should take course work in methods of empirical research and analysis.

Juniors and seniors who have a cumulative grade point average of 3.0 are eligible for courses in independent study, but such courses (PLS 490, 491, 492) do not count toward the forty-eight hour minimum. Political science majors must demonstrate or develop proficiency in a foreign language or satisfy a department-approved research methods requirement. For political science majors, approved courses for the research methods option are PLS 210, 310, AIS 103, CS 205 or CS 141, 142; PHL 115, 472. Substitutions may be made only with the permission of the department chair. Students must satisfy in its entirety either the foreign language or the research methods option.

Political Science Honors Program

Senior political science majors who have a minimum grade point average of 3.0 in political science or who have support from one member of the department may qualify for participation in a departmental honors program. High honors will be conferred on students who write theses or examinations of A quality, while honors will be granted to those whose theses or examinations are of B quality. Credit hours and a grade of C will be awarded to those whose work falls below B. Credit hours earned by participation in the departmental honors program may not be counted toward the forty-eight hour minimum required of majors. Interested students should consult with the department chair. Applications are reviewed individually by a departmental honors committee. If approved, a student may achieve honors in political science in either of two ways.

Option 1

Complete and defend a senior thesis on a topic approved in advance by the departmental honors committee. A maximum of twelve credit hours may be earned through thesis research. The number of hours for which the student registers depends on the nature of the research and is determined jointly by the student and the honors committee.

Option 2

Pass a comprehensive written examination embracing three subfields in which courses are offered in the department. Students who select this option should register for PLS 490, for four credit hours, during the winter or spring quarter of their senior year.

Cooperative Education Program

Cooperative education is available to qualified political science majors in both the private and public sectors. Cooperative education job opportunities may be arranged in government, business, industry, and a variety of private service organizations. Cooperative education offers students a means of partially financing their education while gaining career-related experience. A limited number of elective course credits will be granted to students who satisfactorily complete their programs. Contact the department chair for further information.

Degree Requirements—Political Science

Bachelor of Arts Degree

General Education Requirements 47

Departmental Requirements 48

PLS 112, 113, 122, 123 (select any three) 12

Political science electives 36

Related Requirements 24

Economics, geography, history, philosophy, psychology, or sociology. To meet special needs, courses in such fields as accounting, business, religion, English, and communication may be counted as related hours.

Foreign Language or Research Methods Requirement 20-24

Electives 49-53

Total (minimum requirement) 192

Urban Affairs

Director Mary Ellen Mazey

Urban Affairs is an undergraduate interdisciplinary program in the College of Liberal Arts administered by the Department of Political Science and Urban Affairs. The program offers majors leading either to the Bachelor of Arts or the Bachelor of Science degree. The objective of the program is to provide the student with an appreciation of the urban community as a complex system and to motivate the student to approach urban processes from an interdisciplinary perspective. More
specifically, the program is designed to prepare some students for junior or entrance-level positions in both local government and selected community agencies. The program may also serve the needs of students preparing for graduate work.

Majors are required to complete a common core of courses and then are asked to select a specialization in one of five areas: urban planning (physical/social), public management, criminal justice, or fire administration. With the exception of fire administration, majors may complete all requirements at Wright State. Fire administration is available only to students who have completed an associate degree in fire science technology.

Individuals may apply for admission any time. Students will be notified of acceptance within thirty days. For additional information about the program and admission criteria and procedures, contact the Department of Political Science and Urban Affairs.

**Degree Requirements—Urban Affairs**

**Bachelor of Arts Degree**

**General Education Requirements** 47

<table>
<thead>
<tr>
<th>Departmental Requirements</th>
<th>72</th>
</tr>
</thead>
<tbody>
<tr>
<td>URS 211, 411, 492</td>
<td>14</td>
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<tr>
<td>EC 330</td>
<td>3</td>
</tr>
<tr>
<td>GEO 242, 275</td>
<td>8</td>
</tr>
<tr>
<td>HST 216</td>
<td>4</td>
</tr>
<tr>
<td>PLS 225, 345</td>
<td>8</td>
</tr>
<tr>
<td>SOC 444</td>
<td>4</td>
</tr>
<tr>
<td>Urban affairs electives</td>
<td>31</td>
</tr>
</tbody>
</table>

**Related Requirements** 4

**Foreign Language or Research Methods Requirement** 20-24

**Electives** 45

**Total** 192

**Degree Requirements—Urban Affairs**

**Bachelor of Science Degree**

**General Education Requirements** 47

<table>
<thead>
<tr>
<th>Departmental Requirements</th>
<th>72</th>
</tr>
</thead>
<tbody>
<tr>
<td>URS 211, 411, 492</td>
<td>14</td>
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<tr>
<td>EC 330</td>
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<td>GEO 242, 275</td>
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<td>HST 216</td>
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<tr>
<td>PLS 225, 345</td>
<td>8</td>
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<tr>
<td>SOC 444</td>
<td>4</td>
</tr>
<tr>
<td>Urban affairs electives</td>
<td>31</td>
</tr>
</tbody>
</table>

**Related Requirements** 27-31

- ENG 330 or 343 4
- MTH 129, 224, 226, plus statistics and two computer science courses to be approved by the department 23-27

**Electives** 44-46

**Total (minimum requirement)** 192

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**Religion**

**Professors** Albanese, Friedland (Sanders Scholar), Piediscalzi

**Associate Professors** Barr (chair), Neve, Reece, Stoesz

The Department of Religion is devoted to a comprehensive and nonsectarian inquiry into religion as one of the significant areas of human life and thought. This inquiry shares with other humanities disciplines (history, English, philosophy, etc.) the goal of understanding ourselves and our world. In fact, the whole range of past and present human concerns can be investigated through the academic study of religion, for the religious factor in culture has been a powerful force. Religion is heavily embedded in most of the world's history, its literary documents, its arts, and its social institutions.

The academic study of religion emphasizes the development of critical and responsible standards of judgment and a sympathetic imagination in order to achieve a lucid understanding of the major themes that have arisen in the history of religions and the relation of these themes to the continuing problems of men and women. These ends are pursued by a study of the various religious traditions, their history, thought, social context, and moral and ritual expression. We seek to be self-conscious about our methods and presuppositions and to be critical of our own scholarly endeavor. In addition, the department is strongly committed to interdisciplinary studies such as a course in evolution taught jointly with the Department of Biological Sciences and other courses taught jointly with business, education, English, geography, and political science.

A major in religion requires fifty-six credit hours of work within the department. Students need to complete the sequence REL 111, 112, and 114 early in their program and to take REL 429 near the end of their studies. In addition, a religion major requires the successful completion of one interdisciplinary course and additional courses from the following six areas, with at least one course from each area: American Religion, Biblical Studies, Ethics or Philosophy of Religion, Eastern Religions, Western Religions, and Religion and the Social Sciences for a total of fifty-six or more credit hours. At least twenty-four of these must be at the 300 level or above. Religion majors must also complete
twenty-eight hours of related courses selected from a wide range of disciplines related to their areas of specialization. The courses are to be selected in consultation with, and approved by, the adviser. Additionally, students will be required to demonstrate or develop proficiency in a foreign language related to their area of specialization or, with departmental approval, fulfill a research methods requirement of twenty-one hours. The aim is to allow each student sufficient latitude to explore interests in the arts and sciences to the fullest so as to obtain a genuinely liberal education.

The department also provides a dual major (forty-five credit hours in religion) and a minor (thirty-two hours). See the department chair for complete details.

Any vocation that might follow from a good arts and sciences education is possible for the major in religion. For example, professions such as law, the rabbinate, the ministry, and medicine, and fields such as government and social work, business, or teaching are a few of the possibilities. Normally, the technical training required for these fields would come after completion of the baccalaureate program.

The Public Education Religion Studies Center, a program of Wright State University, is located on the university’s main campus. PERSC’s purpose is to encourage and facilitate increased and improved teaching about religion within constitutional bounds in public education.

**Religion Honors Program**

The Department of Religion encourages superior academic work through full participation in the university’s honors program. Special seminars and discussion sections, departmental reading courses, and other opportunities are available to the superior student. Relatively small classes also make possible a close working relationship between student and professor. Junior and senior students with a 3.0 cumulative grade point average and a religion major or adequate background in religion may participate in the departmental honors program. Interested students should contact the chair of the department.

**Degree Requirements—Religion**

**Bachelor of Arts Degree**

**General Education Requirements**

**Departmental Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>REL 111, 112, 114</td>
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<td>REL 429</td>
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**Interdisciplinary course**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Six additional courses, one from each area:</td>
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</tr>
<tr>
<td>American Religion</td>
<td></td>
</tr>
<tr>
<td>Biblical Studies</td>
<td></td>
</tr>
<tr>
<td>Ethics or Philosophy of Religion</td>
<td></td>
</tr>
<tr>
<td>Eastern Religions</td>
<td></td>
</tr>
<tr>
<td>Western Religions</td>
<td></td>
</tr>
<tr>
<td>Religion and Social Sciences</td>
<td>24</td>
</tr>
<tr>
<td>Religion electives</td>
<td>12</td>
</tr>
</tbody>
</table>

A maximum of eight hours may be credited toward these requirements from REL 470, 481, 482, 483. At least twenty-four hours must be at the 300 level or above.

**Foreign Language or Research Methods Requirement**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Requirements</td>
<td>28</td>
</tr>
</tbody>
</table>

**Approved courses related to area of specialization**

| Electives | 36-41 |

**Total (minimum requirement)**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts Degree</td>
<td>192</td>
</tr>
</tbody>
</table>

**Minor in Religion**

A minor in religion studies amplifies and enhances the preparation of a student for business, industrial, educational, and other professional endeavors, and it would be a valuable life resource. It also enhances the student’s self-understanding and cultural awareness and thus is an important enrichment to any college education.

**Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL 111, 112, 114</td>
<td>12</td>
</tr>
<tr>
<td>Four additional courses in religion*</td>
<td>16</td>
</tr>
<tr>
<td>One interdisciplinary course</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts Degree</td>
</tr>
</tbody>
</table>

* A maximum of four hours may be credited toward these requirements from REL 470, 481, 482, and 483. At least eight hours must be at the 300 level or above.

**Selected Studies**

**Program Committee Coordinator**

Jerome M. Clemens

The program in selected studies allows a student to pursue a self-designed course of study. It is planned for the person with a definite educational objective that diverges from the majors presently offered by the College of Liberal Arts. While the program is free from several traditional requirements, the student must follow certain other requirements and procedures for obtaining the degree.
A student is eligible for admittance to the program after completing forty-five credit hours of study. In consultation with program sponsors, the student formulates a contract outlining study goals and stipulating at least forty-eight credit hours of core courses that help to accomplish those personal goals. The contract is forwarded to the Program Committee for evaluation and approval.

In addition to completing the core and meeting all university and college requirements for graduation, the student must successfully complete at least sixty credit hours of study in courses numbered 300 or above. Finally, from eight to sixteen hours of credit must be earned in LA 490, Senior Project in Selected Studies. A proposal for the project must be submitted to the Program Committee for approval before the beginning of the student’s senior year.

The prospective major in selected studies should see the committee coordinator for more detailed information about the program.

Selected Studies Honors Program

Selected Studies encourages participation of its students in the University Honors Program. A selected studies major may graduate with honors if he or she attains an overall grade point average of 3.4 and an evaluation of excellence on his or her senior project.

Degree Requirements—Selected Studies

Bachelor of Arts Degree

General Education Requirements 47

Core Courses 48

Senior Project (LA 490) 8-16

Foreign Language or Research Methods Requirement 20-24

Electives 57-69

Total (minimum requirements) 192

Ordinarily no more than forty-five hours in one department may be counted toward the degree.

Social and Industrial Communication

Program Coordinator Robert E. Pruett

The dual major in social and industrial communication is offered by the Departments of Communication and Sociology and Anthropology. It is for students interested in organizational communication who want, in addition, an in-depth understanding of the sociological influences operating in organizations.

A graduate of this program will have a specific understanding of the organizational world, including a knowledge of how communication is used in the workplace, an understanding of one’s role in an organization, and skill in coping with organizational change.

Dual Major Degree Requirements—Social and Industrial Communication

Bachelor of Arts Degree

General Education Requirements 47

Departmental Requirements 76

Required courses:

COM 101, 102, 141, 203, and three of the following: COM 441, 443, 445, 447  
SOC 111, 112, 206, 303, and two of the following: SOC 350, 440, 441 48

Major electives chosen from:

ATH 140

COM 233, 343, 345, 451, 453, 455, 471

SOC 340, 341, 407, 442, 444

or other approved courses 28

Foreign Language or Research Methods Requirement 20-24

Electives 44-49

Total 192

Ordinarily no more than a combination of one hundred hours of course work may be taken in the Departments of Art and Art History, Music, and Theatre, and no more than sixty-eight hours in any one department may be counted toward the degree.
Social Work

**Associate Professors** Bognar, Engle (chair), Garrison

**Assistant Professor** Moore

Successful completion of the social work curriculum leads to a professional degree. The major in social work is designed to prepare students to enter social work employment at the beginning level of practice and to prepare students for admission to graduate study in social work. The program is fully accredited on the baccalaureate level by the Council on Social Work Education.

A career in social work requires that an individual possess self-discipline, emotional stability, and intellectual creativity. If you are considering social work as a career, you should be interested in people of widely varying ages, abilities, and backgrounds. You will need to be able to develop rapport with professional colleagues and with many kinds of clients.

Career opportunities for the college graduate with a major in social work have expanded rapidly in recent years. Since 1970, the National Association of Social Workers has admitted persons with bachelor's degrees who have completed undergraduate programs in social work.

There are many areas in which a social worker can function in governmental, private, and voluntary agencies. The majority of social workers perform direct client-related duties. Still others are employed as outreach workers, community organizers, and consultants. Typical agencies that may employ the beginning social worker include family services, children's services, public schools, hospitals, mental health centers, and probation and parole boards.

Newer, expanding fields for social work personnel are developing beyond these traditional services. In particular, recent graduates are finding employment in services to the aged.

Although increasing numbers of graduates are entering social work each year, the demand is still much greater than the supply. This situation is expected to continue into the 1990s. Salaries vary according to experience, education, and geographic location, but a graduate with a bachelor’s degree can expect to start at about $14,000 a year. Opportunities are equal for both men and women and are open to all racial and national backgrounds.

### Social Work Honors Program

The Department of Social Work recognizes those majors who attain a superior achievement and has developed a program allowing a student to be graduated with honors in social work. In this way, students can receive the maximum benefit from their undergraduate work as they have an opportunity to go beyond classroom expectations and realize goals in original research and analysis.

Junior and senior students with a 3.0 overall grade point average and a 3.5 average in social work may apply. Students must initiate and successfully complete an honors project. It is also suggested that they take at least one University Honors 400 interdisciplinary seminar prior to initiating their social work project.

### Cooperative Education Program

Cooperative education is available to qualified social work majors in a wide variety of private and public social service agencies. Cooperative education offers students a means of partially financing their education while gaining career-related experience. A limited number of elective course credits will be granted to students who satisfactorily complete their programs. Contact the department chair for further information.

### Degree Requirements—Social Work

**Bachelor of Arts Degree**

**General Education Requirements** 29-32

**Waive Area Three, Group A**

**Departmental Requirements** 56

- SW 270, 280, 370, 380, 470, 481, 482, 483, 484, 490, 491
- 44
- SW 487
- 12

**Related Requirements** 34-35

- ATH 140; SOC 111, 112
- 12
- COM 102
- 4
- PSY 111, 112
- 8
- PLS 110, EC 101, and political science or economics elective
- 10-11

**Foreign Language or Research Methods Requirement** 20-24

- Electives
- 45-53

**Total (minimum requirement)** 192

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**Sociology and Anthropology**

**Professors** Ballantine, Cargan, Cross, Islam, Melko, Savelis, Siegal

**Associate Professors** Koebernick, Orenstein, Riordan (chair), Thatcher, Welty

**Assistant Professors** Murray, Steinberg (WOBC)

Departmental programs in sociology and anthropology each provide majors leading to the Bachelor of Arts degree.
Liberal Arts/Sociology and Anthropology

Sociology

Sociology is concerned with social relations: how people relate to each other as individuals; how they interact in families; how they communicate in business and governmental situations; how they behave collectively in large groups under conditions of stress (as in a football stadium or during a tornado); how their behavior is affected by city or rural living; and how their behavior comes to be perceived as socially acceptable, deviant, illegal, or immoral.

Obviously, human interaction plays a large part in the work and life of all of us. Sociology attempts to observe and measure these interactions, so that we have a better idea of why our social behavior is as it is, so that we can develop programs to change behavior in ways that are likely to be beneficial to individuals and to society, so that we can predict likely outcomes from certain situations, and so that we can better understand what happens, even if we cannot affect it.

Sociologists work on problems of human interaction at all levels. They may focus their attention on interaction between two individuals as when they study interactions between doctors and patients and learn that the doctor’s prescription may depend as much on that doctor-patient relationship as it does on the diagnosis. Or sociologists may focus on an intermediate problem, such as the relationship between the mix of businesses on a street and the safety of that street for its citizens. Or they may focus on a large-scale problem, such as the relationship between the involvement of a nation in a total war and the improvement in the collective mental health of its citizens.

Training in sociology provides a student with new perspectives on social interaction and change. Students discover that what they had “always known” is not so, that apparently irrational behavior of friends and family has social significance, and that generally nothing is simple. Such perspectives are extremely valuable in seeing oneself in social perspective, in resolving interpersonal problems, in developing effective interpersonal relations in organizational structures, and in understanding transactions between bosses and employees. Thus sociology is a useful major for students who hope for careers that involve dealing with people, or who wish to work for large businesses or organizations, or who plan to develop careers in community service, public relations, or teaching.

Sociology Honors Program

Qualified students are encouraged to conduct independent research in sociology by enrolling in the department’s honors program. Students are eligible for the program if they have a grade point average of 3.0 overall and 3.5 in sociology. Departmental honors are awarded at graduation upon completion of an honors project under the guidance of a faculty member who serves as an individual’s honors adviser. The program provides an opportunity for superior students to focus attention on topics that they find significant. Additional information is available from the departmental office.

Degree Requirements—Sociology

Bachelor of Arts Degree

General Education Requirements

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<tr>
<th>Requirement</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Departmental Requirements</td>
<td>56</td>
</tr>
<tr>
<td>SOC 111, 112, 206, 407, 301, 303</td>
<td>24</td>
</tr>
<tr>
<td>Sociology electives (twenty-eight hours) must be at the 300-400 level</td>
<td>32</td>
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<tr>
<td>Related Requirements</td>
<td>24</td>
</tr>
<tr>
<td>ATH 140 plus at least twenty hours in any courses from anthropology, history, political science, social work, and urban affairs, and selected courses from communication, economics, geography, and psychology</td>
<td></td>
</tr>
<tr>
<td>Foreign Language or Research Methods Requirement</td>
<td>20-24</td>
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<tr>
<td>Electives</td>
<td>41-45</td>
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<tr>
<td>Total</td>
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Anthropology

Anthropology attempts to study the behavior and biology of the human species in all places and at all times. In order to accomplish this rather far-reaching goal, anthropologists draw on the social and biological sciences to utilize all available information and integrate it into a unique perspective.

Cultural anthropology exposes students to ways of life, belief systems, and value systems that differ from their own and thus gives them a better understanding of their own culture. It shows them the great diversity of ways in which cultures deal with universal human problems, from the basic needs of food and shelter to the metaphysical questions of existence that each of the world’s religions attempts to answer. Typical subjects for anthropological study include relationships between language and culture, ecology and subsistence techniques, kinship systems, economics, political systems, religion, and cultural change.

Archaeology also deals with cultures, but those of the past rather than the present. Archaeologists search for and study the material remains of past cultural activity, and attempt to reconstruct the behavior patterns, technology, and social customs of people that no longer exist. This provides students with a historical view of human behavior that complements the studies of cultural anthropologists.
Physical anthropology focuses on the biological aspects of the human species. Human behavior and biology are the result of a long evolutionary history, and physical anthropologists study the fossil evidence for human evolution. Studies of biological variability in modern populations are also part of this discipline, since many differences in physical characteristics among populations represent adaptations to different environments.

Students should emerge from an anthropology major with increased insight into their own behavior and its cultural context. They should also have an increased understanding of the source of behavioral and biological differences between themselves and people of other cultures and subcultures. The concept that our way of doing things is simply one way of solving a particular problem, not the only way or the proper way, should lead to improved relations among people of all backgrounds.

Anthropology majors should normally complete the 100-level introductory courses before taking 300- or 400-level courses.

Anthropology Honors Program

Qualified students are encouraged to conduct independent research in one of the subfields of anthropology by enrolling in the department's honors program. Students are eligible for the program if they have an overall grade point average of 3.0 and an anthropology average of 3.5 by the end of their junior year. Departmental honors are awarded at graduation upon completion of an honors project under the guidance of a faculty member who serves as an individual's honors adviser. Credit for the project is obtained under ATH 492. Additional information is available from the departmental adviser.

Degree Requirements—Anthropology

Bachelor of Arts Degree

General Education Requirements

<table>
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<tr>
<th>Departmental Requirements</th>
<th>56</th>
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<tbody>
<tr>
<td>ATH 140, 141, 142, 448</td>
<td>16</td>
</tr>
<tr>
<td>Cultural electives</td>
<td>16</td>
</tr>
<tr>
<td>Archaeology electives</td>
<td>12</td>
</tr>
<tr>
<td>Physical electives</td>
<td>8</td>
</tr>
<tr>
<td>Open elective</td>
<td>4</td>
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</tbody>
</table>

Within the archaeology electives, students must choose at least one methods/theory course and one area course. ATH 369, Field School in Archaeology, may count for no more than six hours toward major requirements.

Within the cultural electives, students must choose at least one of the following:

ATH 340, 349, 450

Related Requirements

Selected from economics, geography, history, political science, psychology, sociology, and certain courses from biological sciences, geological sciences, and communication

Foreign Language or Research Methods Requirement

Electives

Total

192

Speech Communication

See Communication

Theatre Arts

Professors Bassett (chair), Britton

Associate Professors Blair, Derry, Huberman, Tilford

Assistant Professors Anderson, Conrad, David, Giannone, Hetherington, Kagan-Moore, Lafferty, Tanner

The Department of Theatre Arts is devoted exclusively to the training and education of undergraduate students in the areas of dance, motion pictures, and theatre, and offers curricula leading to the Bachelor of Arts and the Bachelor of Fine Arts degrees.

The Department of Theatre Arts is empowered by the Ohio Revised Code to "require particular preliminary training or talent" for admission to specific programs, and each of the six B.F.A. degree programs have specific criteria for admission to each level of training. Students in all areas must achieve a minimum grade point average of 2.0 by the end of the freshman year to be eligible to continue as a major. An open admissions policy is in force only for first time freshman students; all transfer and returning students seeking placement in a B.F.A. program must audition or be interviewed by the faculty for admission into a program. Any student who returns after an absence of four or more consecutive quarters must reapply to the faculty for readmission to the program, and at the discretion of the faculty may be required to satisfy program requirements which are current at the time of readmission. Details of the admission and retention policy are articulated in detail in the Department of Theatre Arts Student Handbook.

Dance

The program in dance is designed to prepare a student for a career as a professional dancer or choreographer in a variety of professional situations. The dance program uniquely fuses into the dance
curriculum theatrical and musical training and perspectives, enabling the dance student to prepare for specialized careers in modern and ballet companies or in the professional theatre as a dancer who acts and sings.

The underpinnings of the dance curriculum is the daily class in ballet technique with specialized training in modern and jazz-theatre dance. Additional training is required in choreography, dance pedagogy, and dance history. Seniors are required to complete a senior dance project. Required courses outside of dance include studies in theatre, acting, music theory, music literature, and singing.

The department maintains an open admissions policy on the freshman level only. All transfer students must audition for acceptance into the program and for placement. Retention in the program is predicated on the continual growth of the student as judged by the faculty. Formal evaluations are conducted at the end of each academic year and a positive recommendation by the dance faculty is required prior to enrollment at the next level of training.

Dance majors are required to audition for all Wright State University dance concerts and as specified by the dance faculty for other performances, including lecture-demonstrations, dance tours, and dramatic and musical productions. Dance majors must maintain a minimum grade point average of 2.5 to be eligible for graduation.

Degree Requirements—Dance
Bachelor of Fine Arts Degree

General Education Requirements 47

Departmental Requirements 96

Related Requirements 49
TH 101, 102, 144, 145, 146, 154, 155, 156 22
MUS 110 (nine hours), 141, 142, 143 15
Twelve hours from among the following courses: MUS 111, 112, 113, 114, or 117 12

Total 192

Motion Pictures

The curriculum in motion pictures provides a comprehensive study of film as a fine art. Because of its ability to convey the entire spectrum of human experience and imagination, film can be used as a means of exploring those fundamental areas that have always been the preoccupation of liberal arts. The study of film production can provide the individual with an effective and forceful means of artistic expression. To these ends, the curriculum offers two options: the Bachelor of Arts or the Bachelor of Fine Arts degree in theatre with a concentration in motion picture history, theory, and criticism, and the Bachelor of Fine Arts degree in theatre with a concentration in motion picture production.

Students are admitted to the motion picture production program (B.F.A. degree) at the end of their freshman year if they have achieved an overall grade point average of 2.0 and have completed TH 131 and 180 with grades of C or above. Before a major may begin the junior or senior year of the production sequence, the major must have a 2.5 grade point average in all motion picture production classes and a 2.25 minimum overall grade point average. Finally, the student must submit an original film to the faculty for evaluation.

To be accepted to the third year, the major must be trained, disciplined, and show promise of benefiting from continued training. All production students are expected to demonstrate growth in film technique and to continue dedicated studies in film history, theory, and criticism. All production incompetes must be finished before a major may sign up for the first course each fall of the higher production sequence.

Motion Picture Honors Program

The honors program of motion pictures provides students of superior academic ability the opportunity to use, broaden, and demonstrate their knowledge and skills. To earn a degree with honors, students must complete the departmental major requirements, maintain a superior grade point average throughout their course of studies, and successfully complete a senior honors project, TH 499, sometime in the senior year. To apply for admittance to the honors program, the student must have a cumulative grade point average of 3.5 in her or his major and an overall grade point average of 3.25. Both B.A. and B.F.A. students should contact the head of the motion picture area or the department chair for more information.

Cooperative Education Program

Motion pictures offers its majors the opportunity to participate in Wright State University’s Cooperative Education Program. Cooperative education is an optional program which joins participating motion pictures majors, employers, and motion pictures faculty in a formalized process of experience-based learning. Students who enroll in cooperative education supplement classroom study in motion pictures with related work experience (e.g., in an area of film production, distribution, or exhibition) for which they earn additional credit.
Through this program, motion pictures majors can improve their professional preparation by acquiring marketable job skills; gain practical experience related to their course of study under the guidance of professionals in the business; learn to apply their formal education to practical problems encountered in actual work situations; begin to make career choices; and earn income for college expenses.

**Degree Requirements—Motion Picture History, Theory, and Criticism**

**Bachelor of Arts Degree**

The Bachelor of Arts degree integrates a liberal arts education with an emphasis on film as a means of interpreting human experience. Since the motion picture medium encompasses a wide range of expression, a coordinated program of elective courses is individually designed for each student.

**General Education Requirements**

**Departmental Requirements**

- TH 101, 131, 180, 231, 232, 233: 20
- Additional courses in motion picture history, theory, and criticism, to be chosen from TH 331, 332, 333, 334, 399, 435: 36
- Additional courses in motion picture production, to be chosen from TH 181, 182, 183, 281, 282, 283, 381, 382, 383, 436: 9

**Related Requirements**

- ART 237 or 207: 4
- MUS 114; 111 or 112 or 113 or 117: 8
- LCS 455: 4

**Foreign Language Requirement**

French recommended

**Electives**

- 44

**Total**

- 192

**Degree Requirements—Motion Picture Production**

**Bachelor of Fine Arts Degree**

The Bachelor of Fine Arts degree is designed to prepare students for further study and to give them preprofessional training for vocations in many areas of film production; it offers undergraduates an opportunity to develop their creative faculties through this particular medium of artistic expression.

**General Education Requirements**

- 47

**Departmental Requirements**

- TH 101, 131, 180, 231, 232, 233: 20
- Additional courses in motion picture production: (must be taken in sequence) TH 181, 182, 183, 281, 282, 283, 381, 382, 383, 436, 481: 33
- Additional courses in motion picture history, theory, and criticism, to be chosen from TH 331, 332, 333, 334, 399, 435: 21

**Related Requirements**

- LCS 455, 456: 8
- ART 207, 258, 259: 12
- MUS 114; 111 or 112 or 113 or 117: 8

**Electives**

- ART 237, 238, 239: 43

**Total**

- 192

**Theatre**

Students who wish to study theatre choose from four professional degree programs leading to the Bachelor of Fine Arts degree, or from the Bachelor of Arts degree in theatre studies. The professional programs are acting, arts management, design/technology, and directing/stage management.

An open admission policy for the B.F.A. programs is applicable for first term freshmen only. All others, including transfer students, must audition or interview for acceptance into a professional program. Each B.F.A. program has established criteria for selective admission and retention, which include the provision that, by the end of the freshman year, a grade point average of 2.0 must be achieved before a student is formally accepted as a major. A majority of the specific programs require higher minimum grade point averages for graduation. The policies are articulated in the following sections and in the Theatre Arts Student Handbook which is issued annually. Students are required to consult quarterly with an academic adviser.

Students who wish to prepare for teaching on the secondary level must follow a theatre-English dual major in the College of Education and Human Services.

**Degree Requirements—Acting**

**Bachelor of Fine Arts Degree**

The acting program is an intensive four-year program of studies in acting, voice, movement, dance, and singing. The third and fourth years are devoted to a Professional Actor Training program which is necessarily limited to selected, superior students, judged capable of high achievement in acting. Admission to the Professional Actor Training program is by audition only, which occurs at the end.
of the sophomore year. The first two years of the acting program are in preparation for this audition. Because of the highly sequential nature of the acting program, students are generally admitted only in the fall quarter. Retention in the program is based on the student’s growth and development as judged by the acting faculty. All students in the program must receive a grade of C or better to continue in any of the acting sequences. A 2.5 overall grade point average is required for graduation.

General Education Requirements

Departmental Requirements


Related Requirements

MUS 110 (nine hours), 141, 142, 143
DAN 111, 112, 113, 211, 212, 213

Total 192

Degree Requirements—Design/Technology

Bachelor of Fine Arts Degree

The program in design/technology will prepare students for careers in professional theatre as designers (costumes, lights, scenery) or as technicians (technical director, theatre craftspeople). Upon graduation the student has three options: further study on the graduate level, apprenticeship to professional designers, or employment in professional theatre. All design/technology majors must undergo an evaluation by the faculty at the end of each year’s study. Retention in the program is based on the continual growth of the student as determined by the faculty. Professional theatre internships are available for the exceptional student.

General Education Requirements

Departmental Requirements

TH 101, 102, 124, 125, 126, 147, 148, 149, 110 (fifteen hours), 220, 224, 225, 226, 227, 229, 320 (eighteen hours), 324, 325, 326, 360, 361, 362, 366, 367, 368
One of the following concentrations:
TH 420 (eighteen hours), and six hours chosen from TH 427, 428, 429
or TH 424, 425, 426, 350 and three hours chosen from TH 427, 428, 429

Related Requirements

Select from ART 211, 212, 213, 219
Electives

Total 192
program must complete forty-five credit hours of required courses in accountancy, administration, economics, finance, management, and marketing; fifty-seven to sixty credit hours of required courses in theatre; and twenty-nine credit hours of required courses in art, dance, music, motion pictures, English, communication, and library and communication science.

The theatre arts management major emphasizes the practical application of skills. TH 290, Theatre Management, provides the basis for applying general business practices to the specific problems of the theatre. TH 110 (six hours) and TH 310 (twelve hours) involve the student directly in the activities of the University Theatre production program. Four of the TH 110 hours are devoted to management duties. TH 498, Professional Theatre Internship, places the student as a management intern with a professional arts organization, concluding the student's training program.

A 2.0 grade point average is required for admittance to the theatre arts management major at the end of the freshman year. A 2.5 grade point average is required for graduation. All majors are evaluated after each TH 310 enrollment or at the end of each academic year. Evaluation is based upon the student's ability to work effectively with the public, responsibilities in meeting deadlines, and the qualities of professionalism and creativity shown by work in publicity, photography, graphics, writing, and sales. Any student with a poor academic record or lack of significant growth may be asked to drop the program, and the department cannot guarantee the automatic right of students to a professional internship, which is a requirement of graduation.

### Degree Requirements—Theatre Studies

#### Bachelor of Arts Degree

Students majoring in theatre who elect to work toward the Bachelor of Arts degree combine the advantages of a liberal arts education with preparation for a career in one or more areas of theatre or in areas related to theatre. The student is encouraged to maintain a balance between theory and practice and among the various arts of the theatre, gaining insight and perspective through studies in art, history, literature, music, philosophy, religion, and science.

#### General Education Requirements

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<tr>
<th>Requirement</th>
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<tr>
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#### Departmental Requirements

<table>
<thead>
<tr>
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<thead>
<tr>
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<tbody>
<tr>
<td>TH 101, 102, 110 (six hours)</td>
<td>147, 148, 149, 290, 310 (twelve hours)</td>
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#### Required Courses in Business and Administration

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<td>ADM 350; ACC 201, 202, 203, EC 201, 202, 203; FIN 301, 302; MGT 301, 302; MKT 301, 302, 303, 441</td>
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#### Related Requirements

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<td>TH 180; ENG 330; COM 256, and 101 or 102; LCS 455; ART 211 or 212 or 213; DAN 101 or 111; MUS 111 or 112 or 113 or 117</td>
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#### Electives

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<th>Hours</th>
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<tbody>
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<td></td>
<td>192</td>
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</table>

### Urban Affairs

See Political Science and Urban Affairs
Science and Engineering
The College of Science and Engineering offers programs leading to both bachelor's and master's degrees in several disciplines. The Bachelor of Science degree is offered in biological sciences, chemistry, computer science, environmental health, geological sciences, mathematics, physics, and psychology. The college also offers a Bachelor of Science in Computer Engineering degree and a Bachelor of Science in Medical Technology degree. The School of Engineering offers the Bachelor of Science in Engineering degree in electrical systems engineering, mechanical systems engineering, engineering physics, human factors engineering, materials science and engineering, and biomedical engineering.

Bachelor of Arts programs are available in biological sciences, chemistry, computer science, geological sciences, mathematics, and psychology. In addition, interdisciplinary baccalaureate programs are offered by some of the departments, such as geological sciences, mathematics, and physics, and the School of Engineering. Dual major programs are available in virtually all departments (e.g., chemistry-business, physics-education); students should discuss any specific interest with their college adviser. Dual majors will receive a Bachelor of Science degree when both cooperating departments are in the College of Science and Engineering, if approved by both departments. Students interested in certain professional programs ordinarily can take one of the science curricula or a modified program that will be acceptable for graduation, for transfer elsewhere to the desired professional program, or for admission to the Wright State University Schools of Medicine and Professional Psychology.

Admission and Advising

Admission to the college is by application. After consultation in the office of the dean, the student will be assigned an adviser in the appropriate department who will assist the student in developing a program of study.

Master of Science Degree

Programs leading to a Master of Science degree are offered in biology, chemistry, computer science, geological sciences, mathematics, physics, and systems engineering. There are also two graduate programs intended primarily for secondary school teachers. The Master of Science in Teaching with specialization in earth science is offered by the geological sciences department and the physics department offers the M.S.T. with a specialization in physics. A Master of Science in Computer Engineering degree is also offered.
The College of Science and Engineering and the College of Liberal Arts participate in a multidisciplinary program leading to the degree of Master of Arts in applied behavioral science. The program is jointly administered by a steering committee with representatives from the Departments of Psychology, Political Science and Urban Affairs, and Sociology and Anthropology.

Doctor of Philosophy Degree

A Ph.D. degree program in biomedical sciences is cooperatively administered by the College of Science and Engineering and the School of Medicine. The biomedical sciences program is staffed by the largest program faculty on campus. This doctoral program requires approximately four years of study. The first year curriculum consists of an interdisciplinary basic biological core with accompanying mathematical applications. Advanced interdisciplinary courses and laboratory practica are offered in the second year. After successfully completing candidacy examinations, students will pursue scholarly research, present seminars, and gain teaching experience. Final degree requirements are met by satisfactorily defending an acceptable written dissertation.

Degrees and Areas of Study

Requirements for the Bachelor of Science Degree
To be eligible for the Bachelor of Science degree, a student must:

1. Fulfill the university General Education requirements.
2. Complete the residency requirement of forty-five credit hours at Wright State. At least fifteen of the last forty-five hours for the degree must be taken in residence.
3. Complete at least 183 credit hours of acceptable academic work with at least a 2.0 cumulative grade point average and at least a 2.0 grade point average in a major field. A student may find it necessary to earn more than 183 credit hours to meet the requirements of the curriculum chosen.
4. Complete at least seventy-five credit hours in advanced courses (numbered 200 and above) applicable to the degree.
5. Complete at least fifty-four credit hours in one department; by permission of the department chair, up to eighteen hours of this requirement may be taken in a closely related field.

6. Complete all the requirements in one of the approved programs of study established by the departments or within the college. A student must take at least ninety-five credit hours outside the major department.

Requirements for the Bachelor of Arts Degree
To be eligible for the Bachelor of Arts degree in the College of Science and Engineering, a student must complete the requirements listed for the Bachelor of Science and must also:

1. Complete at least twenty-seven hours in departments outside the College of Science and Engineering. The level and type of courses to be taken are subject to the discretion and approval of the student’s major department. These courses are in addition to those needed to fulfill the General Education requirements.
2. Complete at least three courses in a department in the College of Science and Engineering other than the major department. These courses are in addition to those needed to fulfill the General Education requirements.

Honors Program
Departmental honors programs are available in biological sciences, chemistry, computer engineering, computer science, engineering, geological sciences, mathematics and statistics, physics, and psychology. These honors programs give well-qualified students the opportunity to carry out an independent research project and pursue advanced course work. A student interested in pursuing an honors program should consult with the chair of the appropriate department. Honors are awarded at graduation, upon completion of the requirements.

Cooperative Education Program
The cooperative education program permits students to integrate work experience into their academic programs. The nonacademic credit model is available in the departments of the College of Science and Engineering.

Teacher Certification
Students seeking certification to teach in secondary schools should make application for admission to the teacher certification program at the beginning of their sophomore year. These students should contact a teacher certification adviser in the College of Education and Human Services.
Anatomy

Professor Zambernard (chair)
Associate Professors Nagy, Pearson, Phelps, Ream, Scott
Voluntary Associate Professors Call, Makkar, Phillips
Assistant Professors Cohen, Kuntzman

The Department of Anatomy encompasses the areas of gross anatomy, microanatomy (histology, cell biology, transmission electron microscopy, scanning electron microscopy), embryology, and neuroanatomy. The department provides limited course work at the undergraduate level for students planning to enter medicine, nursing, or other health-related professions. It also provides course work at the professional level under the auspices of the School of Medicine and the College of Science and Engineering. Although the department does not offer a graduate degree in anatomy, a student may develop a concentration in anatomy for a Master of Science degree in biology.

Biological Chemistry

Professors Batra, Kmetec, Seybold, Varandani, Weisman (chair)
Associate Professors Alter, Fritz, Leftak, Organisciak
Assistant Professors Harrison, Prochaska

The Department of Biological Chemistry offers courses in the molecular aspects of cellular processes and components, as well as in nutrition. Although the department does not offer a formal baccalaureate degree program, it can serve as an area of concentration for those interested in obtaining a background prior to pursuing a career in medicine and related biomedical sciences.

Honors Program

Under the biological sciences honors program, it is possible for a student to do an undergraduate honors thesis with a faculty member from the Department of Biological Chemistry. Students interested in this area of study need background courses in biology, other life sciences, and chemistry.

Biological Sciences

Professors Ariian, Honda, Hubschman, Hutchings, Kantor
Associate Professors Amon, Barbour, Carmichael, Lucas, Norris (WOBC), Rake, Rossmiller, Runkle, Seiger, Wood
Assistant Professors Foley (acting chair), Hull, Marrack
Instructor Corban

Medical Technology Clinical Year Program

Instructors Schnegelberger (program director), Warnecke

The Department of Biological Sciences offers the following degree programs: Bachelor of Science and Bachelor of Arts in biological sciences, Bachelor of Science in Medical Technology, Bachelor of Science in environmental health, and Master of Science in biology. A dual major program with chemistry is available.

The teaching and research programs of the department are conducted in modern, well-equipped classrooms and laboratories. A 200-acre biology preserve on campus and nearby parks and preserves provide excellent opportunities for terrestrial and aquatic field studies.

Individual programs of study are planned with the assistance of a departmental adviser within the framework of university, college, and departmental requirements. Many undergraduate students include faculty-guided, independent study research projects in their academic programs.

Biological Sciences Honors Program

An honors program enables qualified students to carry out an independent project under the guidance of a faculty sponsor. Students who have maintained a cumulative grade point average of 3.4 during the preceding three quarters may petition the Department of Biological Sciences to pursue an honors program. Application for admission to the program should be made during the junior year. Information concerning this program is available from the departmental office.

Biological Sciences

The Bachelor of Science curriculum offers a broad, integrated, in-depth approach to the life sciences. The departmental unit consists of a balanced core of courses selected from several subject areas combined with elective courses from the Departments of Biological Sciences, Anatomy, Physiology, Biological Chemistry, and Microbiology and Immunology.
Within this degree, several different options are open to the student. Programs of study for students with such differing interests and objectives as graduate work in molecular biology, laboratory work in microbiology, field work in ecology, or preprofessional preparation for medical, dental, or veterinary sciences can be accommodated. The biobusiness option contains a business minor. Other curricular options within the Bachelor of Science degree in biology are general, genetics, microbiology, premedical, toxicology, and ecology.

All of the options for the Bachelor of Science degree in biological sciences have a similar pattern of course requirements which is outlined for the general option in the following section. The curriculum outlines for the other options are available from departmental faculty advisers and in the departmental office. Students will formulate a specific plan of study in consultation with their faculty advisers.

Degree Requirements—Biological Sciences

Bachelor of Science Degree

General Education Requirements 35
Waive Area Two

Departmental Requirements 75-76

Area A (three courses)
BIO 111, 112, and 113 or 114, or, with adviser approval, one Area B course from
the following list. A course may not be used to satisfy both Area A and Area B
requirements. 12-13

Area B (three courses)
BIO 202, 203, 204, 205, 206 15

Area C (three courses)
BIO 302/312, 303, 304, 305, 306, 403 15

Area D (one course)
BIO 307 or 402/405 6

Area E
BIO 492 2

Area F (life science electives)
A minimum of twenty-five hours selected from 300- and 400-level courses in the
Department of Biological Sciences. Courses in physiology, microbiology and immunology,
anatomy, or biological chemistry may also be used to fill Area F requirements. In
certain specified programs, up to ten hours of this requirement may be elected from
300- or 400-level courses in other departments in the college. Students should consult the adviser regarding
recommendations for specific programs. 25

Required Supporting Courses

CHM 121, 122, 141 15
CHM 211/215, 212/216, 213/217 18
PHY 111/101, 112/102, 113/103
or 240/200, 241/201, 242/202 13.5-15
MTH 132, 133, 231; or MTH 132 or 224,
226, and STT 164/165, 265/266
or 466, 467 13-15

Each student must also complete a
laboratory course in analytical chemistry or
a two-quarter sequence in computer science 7.5-8

Electives 14-19

Total (minimum requirement) 196

Degree Requirements—Biological Sciences

Bachelor of Arts Degree

The Bachelor of Arts curriculum is less structured than the Bachelor of Science curriculum. It provides a substantial foundation in the biological and physical sciences while the large number of elective credits allows students considerable flexibility in meeting their individual educational objectives. Students will formulate a specific plan of study in consultation with their faculty advisers.

General Education Requirements 35
Waive Area Two

Departmental Requirements 50-51

Area A (three courses)
BIO 111, 112, and 113 or 114, or, with adviser approval, one Area B course from
the following list. A course may not be used to satisfy both Area A and Area B
requirements. 12-13

Area B (three courses)
BIO 202, 203, 204, 205, 206 15

Area C (three courses)
BIO 302/312, 303, 304, 305, 306, 403 15

Area D (one course)
BIO 307 or 402/405 6

Area E
BIO 492 2

Required Supporting Courses 45.5

CHM 121, 122, 141 15
CHM 211, 212, 213, 215 14
PHY 111/101, 112/102, 113/103 13.5
MTH 130 3

Electives 65.5

Must include ten hours (300 level and above) in the
Department of Biological Sciences, and
twenty-seven hours in academic courses outside the
College of Science and Engineering. At least
twenty-three of the elective hours must be in courses
at the 200 level or above.

Total (minimum requirement) 196
Medical Technology

The medical technology program includes three years of prescribed study at Wright State University and a one-year clinical laboratory curriculum in medical technology programs accredited by the American Medical Association Council on Medical Education through the National Accrediting Agency of Clinical Laboratory Sciences (NAACLS). Upon successful completion of the program, the student receives the Bachelor of Science in Medical Technology degree and is eligible to take the national certification examination given by the Registry of Medical Technologists (ASCP) and the CLS examination administered by the National Certification Agency for Laboratory Personnel. Wright State has affiliation agreements with the following medical technology programs which supply the fourth-year clinical laboratory training: Good Samaritan Hospital, Kettering Medical Center, Miami Valley Hospital, St. Elizabeth Medical Center, and Wright State University. Through special arrangements, students may obtain their clinical training in other NAACLS accredited schools of medical technology after receiving approval from the chair of the Department of Biological Sciences.

In the fall quarter of their junior year, students apply, through the department, to the medical technology programs for admission into the clinical laboratory program. Criteria used to determine admission of individual students by the medical technology programs include the academic record, letters of recommendation, results of a personal interview, and an overall assessment of the potential of the individual for a career as a medical technologist. Responsibility for acceptance of individual students resides with the affiliated medical technology clinical programs. The number of positions in the class for each medical technology clinical program is limited.

Students may enter the clinical training program only after completion of the prescribed program of study at the university (a minimum residence of one year is required).

Degree Requirements—Medical Technology

Bachelor of Science in Medical Technology Degree

General Education Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tr>
<td>BIO 112, 113</td>
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<tr>
<td>BIO 202, 206</td>
<td>10</td>
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<tr>
<td>BIO 302/312, 305</td>
<td>10</td>
</tr>
<tr>
<td>BIO 303 or 307</td>
<td>5-6</td>
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<tr>
<td>BIO 402/405</td>
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<td>BIO 476/477</td>
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</table>

Waive Area Two

Departmental Requirements: 44-45

Required Supporting Courses

<table>
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<tr>
<th>Course</th>
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<td>CHM 121, 122, 141</td>
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<td>CHM 211/215, 212/216, 213/217</td>
<td>18</td>
</tr>
<tr>
<td>CHM 312/314</td>
<td>7.5</td>
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<tr>
<td>PHY 111/101, 112/102, 113/103</td>
<td>13.5</td>
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<td>MTH 129; STT 164/165, 265/266</td>
<td>11</td>
</tr>
<tr>
<td>M&amp;L 426, 427, 428</td>
<td>9</td>
</tr>
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</table>

Clinical Program

BIO 434 through 449 or MT 434 through 450

Total: 205-206

In a program such as this, the sequence in which courses are taken is of extreme importance. The following schedule should be followed closely and all individual programs should be planned with an adviser.

Freshman Year

BIO 112, 113; CHM 121, 122, 141; mathematics. Results of the mathematics placement examination will be used to determine the proper initial mathematics course; see mathematics course descriptions.

Sophomore Year

200- and 300-level biological sciences and chemistry courses; General Education courses.

Junior Year

300- and 400-level biological sciences and microbiology and immunology courses; CHM 312/314; PHY 111/101, 112/102, 113/103; General Education electives.

Senior Year

Clinical program.

Medical Technology Clinical Year Program

The College of Science and Engineering offers the medical technology student a comprehensive fourth-year clinical rotation which enables him or her to master the skills and competencies needed to be a qualified practitioner. The curriculum includes twelve weeks of basic laboratory training at Wright State University, followed by a forty-week rotation among six cooperating affiliated clinical facilities: Veterans Administration Center, Children’s Medical Center, Wright-Patterson Air Force Base Medical Center, Greene Memorial Hospital, Community Hospital of Springfield and Clark County, and the Frederick A. White Center at Wright State.

Prerequisites

Criteria for admission to the fourth-year program are stipulated by the Committee on Allied Health Education and Accreditation of the American Medical Association, developed in cooperation with the National Accrediting Agency for Clinical Laboratory Sciences. The applicant must have the
following course prerequisites: chemistry (a minimum of twenty-four credit hours); biological sciences (a minimum of twenty-four credit hours); and one course each in immunology and mathematics. The applicant must also have a baccalaureate degree or be eligible for one upon completion of the program.

Application and Admission
Applicants should submit application material and schedule an interview with the Medical Technology Program director during the fall quarter of the junior year preceding entry into the program. Applications from students enrolled at Wright State University are processed by the Department of Biological Sciences. Nonaffiliated applicants must meet the same requirements as junior students and will be advised by the Medical Technology Program director. Medical technologists who have been trained in foreign institutions or who wish to augment their credentials may be considered for admission. Admission to Wright State University does not automatically ensure admission into the clinical year.

Curriculum Outline

Course Requirements

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<td>Total</td>
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Environmental Health
The curriculum in environmental health provides students with a sound academic background and the specialized training and experience needed to work effectively in several areas involving the environmental aspects of human health. Career opportunities include work in public health agencies, environmental consulting firms and analytical laboratories, health and safety programs in industries, or advanced study in graduate programs in public health. A field internship program, operated in cooperation with participating environmental health agencies or industries, affords an opportunity for practical experience in a working situation. The program of study which meets the needs and interests of the students is planned in consultation with a departmental adviser.

Environmental Health

Degree Requirements—Environmental Health

Bachelor of Science Degree

General Education Requirements

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<th>Requirement</th>
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<td>Environmental Health Core</td>
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<td>BIO 292, 492</td>
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<td>BIO 360/361, 362/363, 364/365</td>
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<tr>
<td>BIO 415, 461, 462, 463, 464, 466, 467, 468, 469, 486, 487</td>
<td>29</td>
</tr>
<tr>
<td>BIO 366 (Field Internship)</td>
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<td>Required Supporting Courses</td>
<td>82.5</td>
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<tr>
<td>BIO 111, 112, 113</td>
<td>12</td>
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<tr>
<td>BIO 202, 305, 476/477</td>
<td>15</td>
</tr>
<tr>
<td>CHM 121, 122, 141, 361</td>
<td>19</td>
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<tr>
<td>PHY 111/101, 112/102, 113/103</td>
<td>13.5</td>
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<td>MTH 129; STT 164/165, 265/266</td>
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<tr>
<td>GL 101, 201</td>
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<tr>
<td>CS 141</td>
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<tr>
<td>Social Sciences</td>
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<tr>
<td>Two courses, 200 level or above</td>
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<td>Electives</td>
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<td>Total</td>
<td>198</td>
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</table>

The order in which science courses are taken is important. Students should adhere closely to the following schedule.

Freshman Year
BIO 111, 112, 113; CHM 121, 122, 141; MTH 129

Sophomore Year
BIO 202, 305, 292; CHM 361; GL 101, 201; STT 164/165, 265/266; CS 141

Junior and Senior Years
300- and 400-level environmental health courses; physics

Dual Major Program
The Department of Biological Sciences participates in the university’s dual major program with the Department of Chemistry. Students are referred to the departmental office for program requirements.

Chemistry
Professors  Battino, Carraher, Cummings, Karl, Serve, Seybold, Skinner, Tiernan
Associate Professors  DiNunzio, Feld, Fortman, Ghosh (WOBC), Hess (chair), Kane, Katovic
Adjunct Associate Professor  Spanier
Assistant Professors  Cook, Turnbull
The Department of Chemistry offers programs leading to the Bachelor of Arts, Bachelor of Science, and Master of Science degrees in chemistry. The Bachelor of Science in Education degree is also available with a concentration in chemistry. The Bachelor of Arts and Bachelor of Science curricula are designed to prepare undergraduate students for careers as professional chemists, entrance into medical or dental schools, or graduate work in chemistry. Both programs are flexible and permit the options of a heavy concentration in chemistry courses or a combination of a chemistry major with extensive course work in allied (other sciences) or nonallied (e.g., business, arts) areas. In order to develop their academic programs to meet specific needs and individual interests, students should consult with their academic advisors. The Bachelor of Science program is approved by the American Chemical Society.

**Chemistry Honors Program**
Qualified students may be admitted to the departmental honors program during their second or third year. The program involves work beyond the minimum course requirement for the B.S. degree with emphasis on independent studies.

**Degree Requirements—Chemistry**

**Bachelor of Science Degree**
The Bachelor of Science candidate is required to complete the chemistry, mathematics, and physics course sequences in the following program outline with these exceptions: CHM 499. Special Problems in Chemistry, is not required; however, it is expected that the serious chemistry major will complete at least four credit hours of this research course during the senior year. CHM 319, Chemical Literature, is strongly recommended but not required. Although there is no foreign language requirement, two years of study in German, French, or Russian, or one year each of two of these languages, is strongly recommended.

In the Bachelor of Science program with an orientation for the premedical student, CHM 311, 420, and 421 are not required. The student must take CHM 313 and 315. The physics requirement may be met with the PHY 111, 112, 113 sequence and PHY 101, 102, 103 laboratories. BIO 111, 112, and 114 are required. At least two courses must be selected from BIO 202, 206, 302, 303, 305, 307, 403. In addition, the student must take at least nine credit hours selected from BCH 421, 423; BIO 402; CHM 420, 421, 465/467, 466/468, 440, and 441. The student serious about medical school should elect BCH 421 and 423. Students should also be careful to fulfill all university and college degree requirements.

Because the order in which science courses are taken is so important, students are advised to adhere closely to the following schedule, bearing in mind that all individual programs are to be planned in consultation with an adviser.

**Freshman Year**
ENG 111, 112; CHM 121, 122, 141; MTH 132, 133, 231

**Sophomore Year**
CHM 211/215, 212/216, 213/217; PHY 240/200, 241/201, 242/202

**Junior Year**
CHM 311, 312/314, 313/315, 319, 451, 452/457, 453/458; PHY 243

**Senior Year**
CHM 420, 421, 499

**General Education Requirements**
35

Waxe Area Two

**Departmental Requirements**
74.5

CHM 121, 122, 141; 211/215, 212/216, 213/217

CHM 311, 312/314, 313/315; 451, 452, 453

CHM 420, 421, 457, 458

**Related Course Requirements**
32

MTH 132, 133, 231

PHY 240/200, 241/201, 242/202, 243

**Electives**
54.5

Twenty-one hours of foreign language recommended

**Total**
196

**Degree Requirements—Chemistry**

**Bachelor of Arts Degree**
The Bachelor of Arts degree candidate is required to complete the chemistry, mathematics, and physics course sequences in the following program outline. Additional requirements include twelve hours of science electives and two years of foreign language study. The science elective requirement may be satisfied with any course sequence in the College of Science and Engineering, including additional chemistry courses or individual research projects (CHM 499). The foreign language requirement may be satisfied with two years of study in any foreign language or one year each of two languages.

Chemistry majors who are Bachelor of Arts degree candidates are also required to earn twenty-seven credit hours (eighteen of which must be 200 level or above) outside the College of Science and Engineering. This requirement may not be satisfied with courses used to fulfill foreign
language or General Education requirements. In order to ensure a reasonably high level of exposure in some area, it is further required that the student complete at least thirty hours in courses numbered 300 or higher that are applicable to the degree.

General Education Requirements 35

Waive Area Two

Departmental Requirements 53.5
CHM 121, 122, 141; 211/215, 212/216, 213/217 33
CHM 312/314; 451, 452/457, 453/458 20.5

Related Course Requirements 40.5-44
MTH 132, 133, 231 15
PHY 240/200, 241/201, 242/202, 243; or 111/101, 112/102, 113/103 13.5-17
Science electives 12

Foreign Language Requirement 21

Additional Courses outside Science and Engineering 27

Electives 15.5-19

Total (minimum requirement) 196

Dual Major Degree Requirements—Chemistry

Dual Major Requirements in Chemistry

General Education Requirements 35

Waive Area Two

Departmental Requirements 53.5
CHM 121, 122, 141; 211/215, 212/216, 213/217 33
CHM 312/314; 451, 452/457, 453/458 20.5

Related Course Requirements 28.5-30
MTH 132, 133, 231 15
PHY 240/200, 241/201, 242/202, 243; or 111/101, 112/102, 113/103 13.5-15

Second Component of Dual Major 77.5-79

Total (minimum requirement) 196

Computer Engineering

Professors Brandeberry, Crum (chair), Davis, Dixon, Gorowara, Petrofsky

Associate Professors Bethke, Kohler, McCormick, Rattan, Ross, Sanders, Shock

Assistant Professors Golden, Hemmendinger

Instructors Dobbs, Inanli, Jefferis

A program of study, accredited by the Accreditation Board for Engineering and Technology (ABET), leading to a Bachelor of Science in

Computer Engineering degree is offered by faculty from the Department of Computer Science and the School of Engineering. This program emphasizes the design and implementation of computer systems. The distinction between a computer and a computer system is significant. A computer is simply an item of hardware. A computer system incorporates many diverse elements including the computer, the interface, the firmware, the operating system, the system software, the applications programs, and even the apparent intelligence of the system.

The program in computer engineering provides a solid mathematics, basic science, and engineering science base that is common to all quality engineering programs. It emphasizes the theory and design of both hardware and software systems. Modern methodology for the design and verification of reliable, maintainable, real-time software is studied. Techniques for the design, breadboarding, testing, and implementation of computer hardware are stressed. The program allows a wide range of electives to strengthen individual specialties in theory, design, and/or applications.

State-of-the-art laboratories provide a facility for design, experimentation, observation, implementation, and discovery which ideally complement the theoretical portion of the program.

The graduate of this computer engineering program is prepared to supervise, design, and implement computer-embedded systems employing hardware, software, and firmware.

Admission

Students are eligible for admission to the baccalaureate degree program in computer engineering when they have:

1. Completed the freshman computer science sequence (CS 141, 142, 146).
2. Attained a 2.25 grade point average in computer science and computer engineering courses.
3. Attained a 2.25 grade point average overall in Wright State University courses.

When these requirements have been met, students will be advised by the computer engineering faculty. Until that time, they will be in pre-computer engineering and will be advised by University Division or the College of Science and Engineering.

Computer Engineering Honors Program

The honors program in computer engineering provides an opportunity for intellectually gifted students to develop their interests and abilities by pursuing carefully coordinated programs of independent study which improve the breadth and depth of their educational experience in ways not usually available in the normal program of study.
To gain admission to the honors program in computer engineering, a student must have:

1. An overall grade point average of 3.25
2. Completed four of the following seven courses: CS 400, 433, CEG 320, 360, 421, 430, 431, or equivalent transfer hours.
3. Senior standing (at least 136 hours earned, including accepted transfer credit).
4. At least three quarters of study remaining.
5. Demonstrated academic excellence, strong self-motivation, perseverance, and, in general, the ability to pursue advanced study.

For additional information on the honors program, contact the computer science department.

Cooperative Education Program
The cooperative education program allows students to integrate work experience into their academic programs. The nonacademic credit model is available in this area.

Cooperative education students are expected to have completed the first two years of the computer engineering degree model program before beginning the work experience component. Students having completed only one year of the model program may be considered providing that they have at least a 3.0 grade point average overall and in their major. Such students are strongly encouraged to take CEG 260 before the first work experience.

Degree Requirements—Computer Engineering

Bachelor of Science in Computer Engineering Degree

General Education Requirements 35
Area One 8
Area Three 27

Mathematics Requirements 31
MTH 132, 133, 231, 232, 233 25
MTH 253, 257 6

Physics Requirements 24
PHY 240/200, 241/201, 242/202 15
PHY 300, 301, 420 9

Chemistry Requirement
Students who have not previously completed a course in chemistry must take CHM 121

Computer Science Requirements 20
CS 141, 142, 146 12
CS 400, 433 8

Computer Engineering Requirements 32
CEG 260, 360 8
CEG 320 4
CEG 402, 421, 430, 431, 453 20

Additional Engineering Requirements 42
EGR 212, 213 9
EGR 320, 321, 322 11.5
EGR 341, 345, 441, 444, 449 21.5

Electives 16
Electives must be chosen with the consent of an adviser to provide coherent major concentration and design experience.

Total 200
The order in which science courses are taken is important. Students should obtain a model program sheet from the computer science department office or from their adviser. All programs should be planned in consultation with an adviser.

Computer Science

Professors Brandeberry, Crum (chair), Davis, Dixon, Petrofsky, Schaefer

Associate Professors Kohler, Ross, Sanders, Shock

Assistant Professors Bergmann, Golden, Hawley (WOBC), Hemmendinger, Pollack, Sudkamp

Instructors Cook, Courte, Dobbs, Graff, Guild, Inanli, Jefferis, Saks, Thibeault

The computer science degree programs are designed to provide a blend of theory and practice in traditional and modern areas of computer science. The various programs allow students to combine a wide variety of courses in programming, data processing, and computer systems design with courses in business, engineering, science, mathematics, statistics, and other areas. The cooperative education program permits students to obtain supervised work experience which can be integrated with their academic course work.

The department offers both Bachelor of Science and Bachelor of Arts degrees in computer science. Each allows for a concentration in the discipline of the student's choice. A Bachelor of Science in Computer Engineering degree is offered jointly with faculty in the School of Engineering. All courses of study may be taken as cooperative education programs.

The Bachelor of Science and Bachelor of Arts programs prepare students for careers in computing by providing a thorough foundation of physical science, mathematics, and computer science. By selection of electives, students can tailor the program to match their special interests. The concentrations combine computer science with many areas of science, business, or the arts. The concentrations provide excellent backgrounds for the effective use of computers to solve practical problems.
Admission
Students are eligible for admission to the baccalaureate degree programs in computer science when they have:
1. Completed the freshman computer science sequence (CS 141, 142, 146).
2. Attained a 2.25 grade point average in computer science and computer engineering courses.
3. Attained a 2.25 grade point average overall in Wright State University courses.

When these requirements have been met, students will be advised by the computer science faculty. Until that time, they will be in pre-computer science and will be advised by University Division or the College of Science and Engineering.

Computer Science Honors Program
The department offers an honors program in computer science which provides an opportunity for intellectually gifted students to develop their interests and abilities by pursuing carefully coordinated programs of independent study which improve the breadth and depth of their background.

To gain admission to the honors program in computer science, a student must have:
1. An overall grade point average of 3.25.
2. Completed five of the following seven courses: CS 400, 466; CEG 320, 360, 421, 430, 431; or equivalent transfer hours.
3. Senior standing (136 hours earned, including accepted transfer credit).
4. At least three quarters of study remaining.
5. Demonstrated academic excellence: strong self-motivation, perseverance, and in general, the ability to pursue advanced study.

For additional information on the honors program, contact the computer science department chair.

Cooperative Education Program
The cooperative education program permits students to integrate work experience with their academic programs. The nonacademic credit model is available in this department.

Cooperative education students are expected to have completed the first two years of the computer science degree model program before beginning the work experience component. Students having completed only one year of the model program may be considered providing they have at least a 3.0 grade point average overall and in their major.

Degree Requirements—Computer Science
Bachelor of Science Degree

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<td>Area One</td>
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<td>Area Three</td>
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<td>Mathematics Requirements</td>
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<td>MTH 132, 133, 231</td>
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<td>MTH 253, 257</td>
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<td>STT 360, 361</td>
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<td>Physics Requirements</td>
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<td>PHY 240/200, 241/201, 242/202</td>
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<td>Language Requirements</td>
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<td>English (200 level or above) or foreign language*</td>
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<td>Computer Science Requirements</td>
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<td>CS 141, 142, 146</td>
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<td>CS 400, 466</td>
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<td>Computer Engineering Requirements</td>
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<tr>
<td>CEG 260, 360</td>
<td>8</td>
</tr>
<tr>
<td>CEG 320</td>
<td>4</td>
</tr>
<tr>
<td>CEG 430, 431</td>
<td>8</td>
</tr>
<tr>
<td>Computer Science/Engineering Electives</td>
<td>24</td>
</tr>
</tbody>
</table>

Select from up to four hours of programming language workshops; CS 316, 317; CS and CEG 400-level courses

Second Concentration Requirements                 | 32      |

Thirty-two hours from a single liberal arts or science and engineering department program, or a specific program approved by the computer science department

Elective Requirements                             | 8       |

Select from acceptable General Education list, or any 200-level and above course

Total                                              | 195     |

*Includes comparative literature, linguistics, modern language humanities, and classics (CLS, CPL, DN, FR, GER, GR, ITA, JPN, LAT, LI, ML, POL, POR, RUS, SPN) 

No course may count toward two distinct sets of degree requirements.

A model program is available in the computer science office.
Degree Requirements—Computer Science

Bachelor of Arts Degree

General Education Requirements 35
Area One 8
Area Three 27
Mathematics Requirements 24
MTH 132, 133 10
MTH 253, 257 6
STT 360, 361 8
Physics Requirements 13.5
PHY 111/101, 112/102, 113/103
Area One 8
MGT 301, 302 6
Area Three 27
MKT 301, 302 6
FIN 301, 302 6
CEG 303, 304** 6

Area Two 8
MATH 132, 133 10
MTH 253, 257 6
STT 360, 361 8

Language Requirements 12
English (200 level or above) or foreign language

Computer Science Requirements 20
CS 141, 142, 146 12
CS 400, 466 8

Computer Engineering Requirements 20
CEG 260, 360 8
CEG 320 4
CEG 430, 431 8

Computer Science/Engineering Electives 24
Select from up to four hours of programming language workshops; CS 316, 317; CS and CEG 400-level courses

Second Concentration Requirements 32
Thirty-two hours from a single liberal arts department or a specific program approved by the computer science department

Elective Requirements 14
Select from acceptable General Education list, or 200-level and above courses

Total 194.5

Science Option as a Second Concentration

Second Concentration Requirements 36
MTH, EGR* 12
Courses from one science and engineering department program 24


The elective requirement for this option is reduced to four hours.

This option applies only to the Bachelor of Science program.

Engineering

Professors Brandeberry (acting director), Hankey, Jankowski (Emeritus), Petrotsky, Phillips, Ritchie (Emeritus), Rolsten, Rowley, Thomas

Associate Professors Bethke, Dadras, Faghri, Hannen, McCormick, Rattan, Spalding, Weiss

Assistant Professors Datta, Friar, Grandhi, Pujara, Reynolds, Sifred

The School of Engineering currently offers programs leading to the Bachelor of Science in Engineering degree in electrical systems engineering, mechanical systems engineering, engineering physics, human factors engineering, materials science and engineering, and biomedical engineering.

A program in computer engineering is offered jointly with the Department of Computer Science.
The programs in the School of Engineering are characterized by their timely and interdisciplinary nature. They present traditional areas of engineering in modern terms and develop skills that bridge the bounds of established engineering areas. Laboratory facilities cover the areas of semiconductor devices, electronic circuits, digital controls, integrated circuits, control systems, robotics, fluids, vibrations, metallography, materials testing, manufacturing processes, numerical simulation, scanning electron microscopy, and engineering design.

**Admission**

All new freshmen are assigned to the University Division for academic advising. A pre-engineering student is eligible for admission to an engineering major when he or she has:

1. Completed at least forty-five credit hours of academic credit.
2. Attained a cumulative grade point average of at least 2.25.
3. Completed MTH 231, Calculus III.

Upon admission as an engineering major, the student is transferred to the School of Engineering for academic advising.

In general, transfer students who are seeking admission to an engineering major must satisfy the previously listed criteria for pre-engineering students. Transfer students who do not satisfy these criteria may be admitted to the University Division or to the College of Science and Engineering for academic advising pending the completion of the requirements for admission as an engineering major.

**Engineering Honors Program**

The school offers an honors program in engineering. This program provides educational opportunities for talented students to advance their knowledge beyond the provisions of the regular curriculum.

Admission to the honors program requires completion of at least 130 but not more than 150 credit hours; an overall grade point average of 3.25; and securing a faculty sponsor by having demonstrated academic excellence and motivation for advanced study and research.

For additional information on the honors program, contact the School of Engineering.

**Cooperative Education Program**

The cooperative education program permits students to integrate work experience into their academic programs. The nonacademic credit model is available in this department.

Students who are interested in the cooperative education program should file an application with the cooperative education office during their first year of study.

**Systems Engineering**

Systems engineering combines traditional mechanical and electrical engineering skills with modern analytical and computer approaches to problem solving. This program prepares the contemporary engineering student with the necessary skills for such diversified tasks as designing and using miniaturized operational amplifiers and analyzing the dynamics of large flexible spacecraft.

Students take a general engineering program for their first two years and then specialize in either the mechanical or the electrical option. This allows the systems concepts to be incorporated into a traditional area of study.

The interdisciplinary nature of the systems engineering program is perhaps its most distinctive feature. This has been achieved by a faculty with backgrounds in mechanical, electrical, and aeronautical engineering; it is sustained by course offerings designed to emphasize the commonality of these areas.

An outline of the courses required for the degree follows. Selection of an option enables students to prepare for employment or graduate study in the fields of electrical engineering or mechanical engineering. Technical electives permit further specialization or broadening within an option.

Because the order in which engineering courses are taken is important, students should obtain a program guide from the engineering office. Since certain engineering electives are recommended for each of the preceding options, all programs are to be developed by the student in consultation with an adviser.

The systems engineering program is fully accredited by the Accreditation Board for Engineering and Technology (ABET).

**Degree Requirements—Systems Engineering/Electrical Option**

**Bachelor of Science in Engineering Degree**

**General Education Requirements** 35

<table>
<thead>
<tr>
<th>Waive Area Two</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Departmental Requirements</strong> 96.5</td>
</tr>
<tr>
<td>EGR 121, 142, CS 141, 142</td>
</tr>
<tr>
<td>EGR 212, 213</td>
</tr>
<tr>
<td>EGR 313, 315, 320, 321, 322, 341, 345</td>
</tr>
<tr>
<td>EGR 351, 421, 425, 426, 430, 435, 441, 444, 449, 490, 491</td>
</tr>
</tbody>
</table>
Related Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 132, 133, 231, 232, 233, 253</td>
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</tr>
<tr>
<td>CHM 121, 122</td>
<td>10</td>
</tr>
<tr>
<td>PHY 240/200, 241/201, 242/202</td>
<td>15</td>
</tr>
<tr>
<td>STT 363</td>
<td>3</td>
</tr>
</tbody>
</table>

Technical Electives* | 15 |

Total | 202.5 |

*One half of the hours must be engineering electives; the remainder may be any course numbered 200 or above (except EC 201, 202, 203; EGR 405; and QBA 201) offered by the College of Science and Engineering or the College of Business and Administration.

Degree Requirements—Systems Engineering/Mechanical Option

Bachelor of Science in Engineering Degree

General Education Requirements | 35 |

Waive Area Two

Departmental Requirements | 91 |

EGR 121, 142; CS 141, 142 | 14.5 |
EGR 212, 213 | 8 |
EGR 313, 315, 317, 318, 320, 321, 322, 360, 370 | 35.5 |
EGR 405, 407, 414, 425, 426, 430, 490, 491 | 33 |

Related Course Requirements | 56 |

MTH 132, 133, 231, 232, 233, 253 | 28 |
CHM 121, 122 | 10 |
PHY 240/200, 241/201, 242/202 | 15 |
STT 363 | 3 |

Technical Electives* | 19 |

Total | 201 |

*One half of the hours must be engineering electives; the remainder may be any course numbered 200 or above (except EC 201, 202, 203; EGR 341; and QBA 201) offered by the College of Science and Engineering or the College of Business and Administration.

Engineering Physics

Engineering physics is an interdisciplinary program offered jointly by the School of Engineering and the Department of Physics and is administered by the School of Engineering. The program contains a core of engineering science, mathematics, and physics courses. This prepares the student for conceptual design, research, and development work in industry or for graduate work in electrical engineering, mechanical engineering, nuclear engineering, aerospace engineering, physics, or a combination of these.

The engineering physics program differs from the systems engineering program in that while much of the subject matter is the same, some of it is taught in the physics department where it receives more generalized and theoretical treatment. For engineering physics majors, a technical elective is defined as any course numbered 200 or higher that is offered by either the College of Science and Engineering or the College of Business and Administration except EC 201, 202, 203, and EGR 405.

The order in which engineering and technical courses are taken is very important. Because of this and the various options open to the student, a program guide should be obtained from the engineering office and one of the engineering physics advisers consulted for curriculum planning. A student's total hours may vary from the hours shown because of elective course choices.

Degree Requirements—Engineering Physics

Bachelor of Science in Engineering Degree

General Education Requirements | 35 |

Waive Area Two

Departmental Requirements | 60.5-62.5 |

EGR 121, 142; CS 141, 142 | 14.5 |
EGR 212, 231 | 5 |
EGR 315, 320, 321, 322, 341 | 19-20 |
(PHY 420 may be substituted for EGR 315) |
EGR 421, 425, 426, 490, 491 | 22-23 |
(Nine hours of PHY 494 may be substituted for EGR 490 and 491)

Physics Requirements | 46-48 |

PHY 240/200, 241/201, 242/202, 243, 260 | 21 |
PHY 316, 371, 372 | 9 |
PHY 450, 451, 452, 460, 461 | 16-18 |
(A student may select either PHY 460, 461 or PHY 300, 301)

Related Course Requirements | 41 |

CHM 121, 122 | 10 |
MTH 132, 133, 231, 232, 233, 253, 333 | 31 |

Technical Electives | 19 |

Must include three of the following courses: EGR 317, 318, 441; PHY 322, 332

Total | 201.5-205.5 |
Human Factors Engineering
The program in human factors engineering is a combination of systems engineering and experimental psychology. It is designed for serious students who are interested in people and are willing to understand complex technology. Graduates of the program find employment in research, design, or other engineering activities. They will also be prepared for graduate study in engineering, psychology, or human factors engineering.

Degree Requirements—Human Factors Engineering
Bachelor of Science in Engineering Degree
General Education Requirements 20
Waive Area Two
Reduce Area Three to twelve hours in Group B
Departmental Requirements 64
EGR 121, 142; CS 141, 142 14.5
EGR 212, 213 8
EGR 306, 315, 320, 321, 322 19.5
EGR 405, 425, 426, 471, 472 22
Psychology Requirements 45
PSY 111, 112 8
PSY 300, 307, 321, 371, 373 21
PSY 400, 444, 465, 471 16
Related Course Requirements 59
CHM 121, 122 10
MTH 132, 133, 164, 231, 232, 233, 253, 265 34
PHY 240/200, 241/201, 242/202 15
Technical Electives* 12
Total 200
*Any courses numbered 200 or above offered by the College of Science and Engineering

Materials Science and Engineering
Materials science and engineering encompasses a broad range of engineering activities. The development of new materials, such as advanced composites for aircraft, and the correct use of common materials, such as steel and plastic, illustrate this diversity. Processing, testing, product design, manufacturing, and research are frequent responsibilities of the materials engineer. Materials science and engineering has evolved over the last fifteen years from metallurgical engineering, polymer chemistry, and ceramic science. As more new materials are developed, the interrelation of materials disciplines has become apparent and important.

The Wright State materials program provides a broad background in the fundamentals of materials science in addition to careful instruction in engineering skills necessary to develop and use materials. The emphasis is on structural materials for advanced technology and product applications, highlighted by an emphasis on materials processing.

The program is fully accredited by the Accreditation Board for Engineering and Technology (ABET).

Because the order in which technical courses are taken is very important, and because a selection of materials-related course sequences is available, the student should contact a materials science and engineering adviser in the engineering school at the earliest possible time. The curriculum for the degree in materials science and engineering follows.

Degree Requirements—Materials Science and Engineering
Bachelor of Science in Engineering Degree
General Education Requirements 35
Waive Area Two
Departmental Requirements 74.5
EGR 121, 142; CS 141, 142 14.5
EGR 212, 213 8
EGR 313, 315, 370, 375, 376, 385, 386 22
EGR 477, 479, 481, 483, 492 (eight hours) 22
EGR 485, 486, 487, 489 (select any two) 8
Related Course Requirements 58
CHM 121, 122, 361, 465, 467 18
MTH 132, 133, 231, 232, 233 25
PHY 240/200, 241/201, 242/202 15
Advanced Materials-Related Electives 23
Courses to be selected from an approved list
Advanced Electives 11
Total 201.5

Biomedical Engineering
Biomedical engineering involves the application of engineering principles and techniques to solve biomedical problems. Current efforts in biomedical engineering include the development of medical and surgical measuring instruments, the design of prosthetic devices and materials, and the adaptation of computer technology to serve the health care industry. Two separate curricula are available leading to the Bachelor of Science degree.
General Option

The general option in biomedical engineering prepares the graduate for employment in hospitals or in the biomedical engineering industry. Graduates are also well prepared to pursue graduate training in biomedical engineering or in a traditional engineering area.

Premedical/Predental Option

The premedical/predental curriculum satisfies admission requirements for medical or dental schools. Biomedical engineering graduates as a group currently have the highest rate of acceptance to medical schools, when undergraduates are classified by major. *Graduates are also well prepared to pursue graduate training in engineering or in the life sciences.

*Table 1-B from the A.A.M.C. 1979-1980 Catalog

Degree Requirements—Biomedical Engineering

Bachelor of Science in Engineering Degree

General Education Requirements 35
Waive Area Two

Departmental Requirements 67.5
EGR 142; CS 141, 142 12
EGR 212, 213 6
EGR 315, 320, 321, 322, 341 20
EGR 422, 425, 426, 428, 441, 461, 463 27.5

Related Course Requirements 75
CHM 121, 122 10
CS 210 3
BIO 111, 112, 114 12
MTH 130, 132, 133, 231, 232, 233 25
PHY 240/200, 241/201, 242/202 15
PHS 218, 219 10

General Option 26
Technical electives* 5

Premedical/Predental Option 26
CHM 141 5
CHM 211/215, 212/216, 213/217 18
Technical elective 3

Total 203.5

*At least fifty percent of these hours must be engineering electives, the remainder may be courses numbered 200 or above (except EC 201, 202, 203) offered by the College of Science and Engineering or the College of Business and Administration. Concentration in an electrical or mechanical area is strongly recommended.

Computer Engineering

The program in computer engineering is offered jointly by the Department of Computer Science and the School of Engineering. For degree requirements, see Computer Engineering.

Geological Sciences

Professors Gregor, Kulander, Pushkar, Richard, Schmidt, Toman, Unrug (chair)
Associate Professors Kramer, Wolfe
Assistant Professors Brakenridge, Kenoyer, Strickland (WOBC)

The Department of Geological Sciences offers degree programs leading to the Bachelor of Science and Bachelor of Arts degrees with a major in geological sciences. Both programs are designed to include geology and related sciences and to prepare students for graduate study or professional employment. The Bachelor of Arts program is intended to be more flexible and to permit students with either broad or specialized interests to fulfill their program needs. The Bachelor of Science program is more highly structured and, through the various options offered, is intended to prepare students for rather specific professional or technical objectives. The Bachelor of Arts program’s flexibility readily permits interdisciplinary programs such as the dual major, in which a student may major in two quite different fields simultaneously. Prospective geological sciences majors will remain in the University Division for administrative purposes until completion of GL 151 and 152 (or 101 and 102 or 111 and 112) and MTH 130, but interested students should contact the department chair as early as possible so they can be assigned a provisional departmental adviser pending formal admission to the program of their choice. A 2.20 grade point average is required for admission into any geological sciences program of study.

The department has modern equipment for use in teaching and individual student investigations. Comparison and research collections in both paleontology and mineralogy are maintained.

Field geology is taught at the Wright State Geological Field Station in Tennessee, near Smoky Mountain National Park. The station is adjacent to the western end of the Smoky Mountains, and field areas in several different geologic and physiographic provinces are readily accessible. Field trips are taken to mines and related geologic areas in eastern Tennessee and western North Carolina.

The department seeks to offer a broad spectrum of educational options within a framework of sound academic guidelines, because personal objectives, interests, and aptitudes vary considerably with each individual. A student majoring in
geological sciences has considerable choice in the basic program, options, and elective courses. The student should be aware of these choices as early as possible, and because course sequencing, particularly in Bachelor of Science options, is a critical factor, each student is strongly urged to consult his or her adviser to develop an individual program.

Supporting electives are courses in science and engineering (exclusive of geology and psychology) that are not normal preparation or prerequisites for required courses.

Minor modifications in departmental programs will be made from time to time. It is the responsibility of the student to confer with his or her adviser periodically during the academic year, preferably once each quarter before the registration period.

Geological Sciences Honors Program

Candidates for the B.A. or B.S. degree in geological sciences who have a cumulative grade point average of 3.0 or better may apply at the end of their junior year for admission to the departmental honors program. Requirements for graduation with honors in geological sciences are a cumulative grade point average of 3.0 or better and satisfactory completion of a senior thesis under the guidance of a member of the faculty. Applications should be made in writing to the Undergraduate Studies Committee, Department of Geological Sciences, and should include the following:

1. Name of student.
2. Expected date of graduation (which must be at least three full quarters, not including summer quarter, after the date of the application).
3. A summary proposal (of about a hundred words) for a senior thesis topic.
4. The endorsement of the student’s departmental adviser and that of the senior thesis adviser as well, if not the same.
5. Candidates will be encouraged to attend at least one interdisciplinary honors seminar.

*The senior thesis is to be represented by a total of between six and nine credits in GL 499 taken as a portion of the prescribed block of geological sciences and related electives in the case of the B.S. degree or geological sciences electives in the case of the B.A. degree. It shall be judged only as satisfactory or unsatisfactory, without being awarded a letter grade. The topic may be chosen from any branch of geological sciences; current course listings in this catalog may be taken as a rough indication of the range available. Broad latitude will be allowed in the study methods adopted: field work, experiments, theoretical studies, and literature study are all considered viable, either singly or in combination. The candidate’s thesis adviser will normally judge the completed thesis, but may elect to co-opt other members of the faculty for assistance, either within the department or outside.*

Degree Requirements—
Geological Sciences/Geophysics Option

Bachelor of Science Degree

The Department of Geological Sciences offers a Bachelor of Science degree in geological sciences with a general geology option. The course requirements and recommended course sequences follow.

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Departmental Requirements</strong></td>
<td>78</td>
</tr>
<tr>
<td>GL 151, 152, 154, 155, 203, 301, 311</td>
<td>23</td>
</tr>
<tr>
<td>GL 330, 333, 410, 412, 428, 434</td>
<td>31.5</td>
</tr>
<tr>
<td>Geological sciences electives</td>
<td>23.5</td>
</tr>
<tr>
<td><strong>Related Course Requirements</strong></td>
<td>71-78</td>
</tr>
<tr>
<td>CHM 121, 122, 141</td>
<td>15</td>
</tr>
<tr>
<td>CS 210 or 141 and 142</td>
<td>3-8</td>
</tr>
<tr>
<td>PHY 240/200, 241/201, 242/202</td>
<td>15</td>
</tr>
<tr>
<td>MTH 132, 133 and one course from MTH 231, STT 265, 360, 466</td>
<td>13-15</td>
</tr>
<tr>
<td>Supporting electives from College of Science and Engineering</td>
<td>25</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>204-211</td>
</tr>
</tbody>
</table>

The following courses are suggested for the freshman year: CHM 121, 122, 141; ENG 111, 112, GL 151, 152, 154, 155, 203. Following the freshman year, the departmental adviser should be consulted for program planning.

Degree Requirements—
Geological Sciences/Geophysics Option

Bachelor of Science Degree

The Department of Geological Sciences, in cooperation with the Department of Physics, offers a Bachelor of Science degree in geological sciences with a geophysics option. This program prepares the student to assume a career in this field or to pursue graduate study in geophysics.

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Departmental Requirements</strong></td>
<td>113.5-118.5</td>
</tr>
<tr>
<td>GL 151, 152, 154, 155, 203</td>
<td>12.5</td>
</tr>
<tr>
<td>GL 301, 311, 333, 434, 410</td>
<td>30</td>
</tr>
<tr>
<td>GL 412, 422, 423, 424, 426, 428</td>
<td>21</td>
</tr>
<tr>
<td>CS 210 or 141 and 142</td>
<td>3-8</td>
</tr>
<tr>
<td>PHY 240/200, 241/201, 242/202, 243, 260</td>
<td>21</td>
</tr>
<tr>
<td>Geological sciences or physics electives</td>
<td>26</td>
</tr>
</tbody>
</table>
## Related Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHM 121, 122, 141</td>
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<tr>
<td>MTH 132, 133, 231, 232, 233</td>
<td>25</td>
</tr>
<tr>
<td>Electives</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>207.5-212.5</strong></td>
</tr>
</tbody>
</table>

The recommended sequence is as follows:

### Freshman Year
- CHM 121, 122, 141
- ENG 111, 112
- GL 151, 152, 154, 155, 203
- MTH 132, 133, 231

### Sophomore Year
- GL 301, 311, 412
- MTH 232, 233
- PHY 240/200, 241/201, 242/202

### Junior Year
- CS 210
- GL 312, 333, 434
- PHY 243, 260

### Senior Year
- GL 422, 423, 424, 426, 428
- Geological sciences electives
- Physics or mathematics electives

## Degree Requirements—Geological Sciences

### Bachelor of Arts Degree

The Bachelor of Arts curriculum is designed for students who desire scientific training, especially through interdisciplinary programs. Because of the broader and more flexible approach, students who elect to follow a Bachelor of Arts program must demonstrate specific educational objectives that can reasonably be attained through this program.

### General Education Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waive Area Two</td>
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### Departmental Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL 151, 152, 154, 155, 203, or equivalent</td>
<td>12.5</td>
</tr>
<tr>
<td>GL 311, 330, 333, 428, 434</td>
<td>25.5</td>
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<tr>
<td>Geological sciences electives</td>
<td>22.5</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>60.5</strong></td>
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### Related Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 111, 112, 113 or</td>
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<tr>
<td>PHY 111, 112, 113 or</td>
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<td>Supporting electives</td>
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<tr>
<td>Mathematics</td>
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<td>Electives</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>47-50</strong></td>
</tr>
</tbody>
</table>

### Degree Requirements—Geological Sciences

### Groundwater Technology Option

### Bachelor of Arts Degree

### General Education Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waive Area Two</td>
<td>35</td>
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</table>

### Departmental Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL 151, 152, 154, 155, 201, 203, 309, 311, 333, 365, 421, 428, 429, 434, 451, 499</td>
<td>57</td>
</tr>
<tr>
<td>Geological sciences electives</td>
<td>8</td>
</tr>
<tr>
<td><strong>Related Course Requirements</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

### Electives

<table>
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<th>Credits</th>
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<td>ACC 201, 202, 203</td>
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<tr>
<td>ADM 105</td>
<td>3</td>
</tr>
<tr>
<td>CHM 101, 102</td>
<td>9</td>
</tr>
<tr>
<td>CS 141</td>
<td>4</td>
</tr>
<tr>
<td>EC 201, 202</td>
<td>6</td>
</tr>
<tr>
<td>EGR 121, 141, 251</td>
<td>9.5</td>
</tr>
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<td>FIN 301, 302</td>
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</tr>
<tr>
<td>MGT 200</td>
<td>3</td>
</tr>
<tr>
<td>MTH 131, 132, or 164, 165</td>
<td>11</td>
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<tr>
<td>QBA 201</td>
<td>3</td>
</tr>
<tr>
<td>Skills requirement*</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>205</strong></td>
</tr>
</tbody>
</table>

*This requirement is intended either to broaden or to deepen existing or newly gained skills; e.g., data processing in addition to CS 141, technical writing in addition to ENG 111 and 112, or more engineering drawing and/or welding or equipment repair. This area also includes a minimum of ten weeks of internship practice with an industry contractor or government agency in an approved, supervised practical activity.

### Mathematics and Statistics

#### Professors
- Frick, Gorowara, McKee, Park, Rutter (chair), Sachs, Schaefer, Silverman (Emeritus)
- Coppedge, Dombrowski, Haber, Lewkowicz, L. Low, M. Low, Maneri, Mann, Mazumdar, Melike, Perkel, Ratnaparkhi
- Arasu, Evans, Hawley (WOBC), Khamis, Lin, R. Mercer, D. Miller, Rife (WOBC), Ryan, Seoh, Smith, Turyn, Vance, Voss, Westwood
- Bell, L. Mercer, M. Miller, Morgan, Tanner

The Department of Mathematics and Statistics offers programs leading to the Bachelor of Arts, Bachelor of Science, and Master of Science degrees. The Bachelor of Science candidate may select a concentration in pure mathematics, applied mathematics, statistics, or computing. The Bachelor of Arts program provides a broad background in mathematics with a liberal arts orientation.
The College of Education and Human Services offers a Bachelor of Science in Education degree with a major in mathematics education.

The Department of Mathematics and Statistics participates in the dual major program. For example, dual majors are available with computer science, physics, and engineering.

A cooperative education program is available which allows students to alternate quarters of work and study during their junior and senior years. Interested students should contact the department chair for further details.

A mathematics major must complete one of the following programs. Each program includes General Education requirements, departmental requirements, related course requirements, and general electives. The departmental component consists of required courses and electives in mathematics and statistics; the ordering of these courses and the selection of electives should be discussed with the adviser. The student must achieve at least a 2.0 grade point average in mathematics and statistics courses numbered 300 or higher. The general electives may be taken outside the Department of Mathematics and Statistics. All courses intended to satisfy the requirements of the program must be approved by the adviser.

More detailed information is available from the Department of Mathematics and Statistics.

### Mathematics and Statistics

#### Honors Program

Students who have demonstrated superior ability in upper-level mathematics and statistics courses may undertake an honors program with the approval of the department. Further information is available from the departmental office.

### Degree Requirements—Mathematics/Pure Mathematics Concentration

#### Bachelor of Science Degree

**General Education Requirements**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>69</td>
</tr>
</tbody>
</table>

**Required Courses**

- MTH 132, 133, 231, 232, 233, 355, 431, 432, 433 (or 434), 451, 452

**Recommended Courses**

- MTH 280, 433, 434

**Elective Courses**

- STT 360, 361, 461, 462

### Mathematics and Statistics/Science and Engineering

#### Related Course Requirements

- CS 141 and 142 or equivalent
- PHY 240/200, 241/201, 242/202

#### Electives

- 56

- Foreign language study recommended

- Total: 183

### Degree Requirements—Mathematics/Computing Concentration

#### Bachelor of Science Degree

**General Education Requirements**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>47</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>61</td>
</tr>
</tbody>
</table>

**Required Courses**

- STT 360, 361
- At least one of the following:
  - MTH 431, 451, 457

**Elective Courses**

- MTH 306, 407, 410, 431, 432, 451, 452, 457
- (MTH 306, 407, 410 are recommended)

**Related Course Requirements**

- 28

- CS 141, 142, 146, 400
- At least three from:
  - CEG 320, 430, 431, CS 405, 433, 466, 470, 480
  - MTH 476, 477

**Electives**

- 47

**Total**

- 183

### Degree Requirements—Mathematics/Statistics Concentration

#### Bachelor of Science Degree

**General Education Requirements**

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>47</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>69</td>
</tr>
</tbody>
</table>

**Required Courses**

- If physics is chosen for the natural science requirement, one of the following programs must be followed:
  - PHY 111/101, 112/102, 113/103, 210
  - PHY 240/200, 241/201, 242/202

**Electives**

- 47

**Total**

- 183
Degree Requirements—Mathematics
Bachelor of Arts Degree

General Education Requirements 47

Degree Requirements—Mathematics
Bachelor of Science Degree

General Education Requirements 35

Dual Major
Special programs of study are currently available in the departmental office for students interested in a dual major in mathematics and computer science, engineering, or physics.

Dual major programs may be arranged for students with other interdisciplinary interests. Basic requirements follow and must be integrated with a corresponding program from another participating department. All programs require a minimum of 183 credit hours.

Dual Major Degree Requirements—Mathematics
Bachelor of Science Degree

General Education Requirements 47

If physics is chosen as the natural science requirement, one of the following programs must be followed:

PHY 111/101, 112/102, 113/103, 210
PHY 240/200, 241/201, 242/202
Departmental Requirements 45

Required Courses
MTH 132, 133, 231, 232, 355
At least two of the following:
- MTH 431, 432, 434, 451, 452, 457, 458
- MTH 480, 481, 482
- STT 461, 462

Elective Courses
- STT 360, 361, 461, 462, 466, 467

Related Course Requirements 8
- CS 141 and 142 or equivalent

Microbiology and Immunology

Professor Bigley (chair), Girón, Sawyer, Suriano

Associate Professors McFarland, Smith, Thomas, Warren

The Department of Microbiology and Immunology offers introductory courses in microbiology and immunology as well as a number of advanced courses. The introductory microbiology course is intended for health science majors, except for medical technologists. The advanced courses provide an area of concentration for life science majors. The course offerings encompass concepts of diagnostic microbiology, virology, and immunology as well as the principles of immunology, immunobiology, virology, and bacteriology. The biology of host-parasite interactions and the structure-function relationship unique to microorganisms are emphasized. A major in biological sciences with concentration in the area of microbiology and immunology prepares the student for graduate study in these areas or for further training as a diagnostic or research laboratory technologist.

Students who enroll in courses at the 400 level should have completed the biological sciences sequence through BIO 402 as well as CHM 211, 212, 213, and 312. BCH 421, 433, 423 or equivalent are recommended as preparation.

Physics

Professor Hanson, Martin

Associate Professors Andrews (chair), Bambakidis, Hemsky, Jaworowski, Listerman, Wolfe, Wood

Assistant Professors Clark, Taylor

The Department of Physics offers a program leading to a Bachelor of Science degree with a major in physics. The Department of Physics and the School of Engineering jointly offer a program leading to the Bachelor of Science in Engineering degree in engineering physics; see Engineering. Students in secondary education may major in physics and earn the Bachelor of Science in Education degree awarded by the College of Education and Human Services; see Physics Education.

Minimum requirements for a Bachelor of Science degree with a major in physics include successful completion of the required courses, as well as the completion of university and college degree requirements.

In addition to the required courses, it is recommended that every physics major take the following courses: PHY 421, 442, 494; BIO 111, 112, 113. The physics major planning graduate study is also strongly urged to take the following courses: PHY 480, 481, 482; one to two years of a foreign language, either French, German, or Russian; and additional mathematics courses.

Physics Honors Program

The Department of Physics has an honors program designed to provide the superior student with a program of greater creativity and intellectual challenge. Students wishing to participate in this program must apply to the department during the spring quarter preceding their participation in the honors program. To participate, students should have at least a 3.0 grade point average overall and at least a 3.0 in physics courses numbered 300 and above. To graduate with honors in physics, completion of PHY 480, 481, 482, and nine hours of honors research (499), with grades of B or better, is required.
Degree Requirements—Physics
Bachelor of Science Degree

General Education Requirements 35
Waive Area Two

Departmental Requirements 61
PHY 240/200, 241/201, 242/202, 243, or equivalent 17
PHY 260, 371, 372 10
PHY 315, 316, 322 10
PHY 420, 450, 451, 452, 460, 461, 462 24

Related Course Requirements 52
MTH 132, 133, 231, 232, 233, 253 28
MTH 332, 333 6
CHM 121, 122, 141 (or 361) 15
CS 210 or equivalent 3
Electives 47

Total 195

Since the order in which courses are taken is important, students should adhere closely to the following suggested program for the required courses.

Freshman Year
PHY 240/200, 241/201, 242/202; ENG 111, 112; MTH 132, 133, 231

Sophomore Year
PHY 243, 260, 315, 316, 371, 372; CHM 121, 122, 141; CS 210; MTH 232, 233, 253

Junior Year
PHY 322, 420, 450, 451, 452; MTH 333, 332

Senior Year
PHY 460, 461, 462

The results of the mathematics placement examination will be used to determine the proper initial mathematics course; see mathematics course descriptions. If a student does not have a strong science and mathematics background, the student might choose to delay PHY 240, 241, 242 until the sophomore year. These schedules would require some adjustment of the junior and senior year curricula. An adviser should be consulted as soon as possible to arrange a suitable program.

The Department of Physics encourages students with interdisciplinary interests to pursue a dual major in physics and a related discipline. A departmental adviser will help each student arrange a suitable program of study. In addition, there are two formal physics degree option programs which follow. The department has model programs for each option which are available on request.

Degree Requirements—Physics/Geophysics Option
Bachelor of Science Degree

The Department of Physics in cooperation with the Department of Geological Sciences offers a program leading to a Bachelor of Science in physics with a geophysics option. This option is designed for students who plan a career in physics in a geology-related setting or who plan to pursue graduate study in geophysics.

Students following the physics program with the geophysics option must meet the requirements of the basic physics degree program. In addition, the following courses are required.

Geophysics Option Requirements 34
GL 151, 152; or GL 101, 102 6
GL 154, 155 2
PHY 422, 423, 424 11
Electives chosen from:
GL 301, 311, 333, 410, 412, 417, 451 15

In addition to these required courses, it is recommended that students pursuing the geophysics option also take GL 434 and participate in the geophysics seminars.

Degree Requirements—Physics/Computing Option
Bachelor of Science Degree

The Department of Physics offers a program leading to a Bachelor of Science degree in physics with a computing option. This option is designed for students who plan a career in any of the many areas of theoretical or experimental physics which involve extensive use of digital computers.

Students following the physics program with the computing option must meet the requirements of the basic physics degree program. In addition, the following courses are required.

Computing Option Requirements 24
CS 141 (or CS 210), 142 8
CS 146 4
CS 400 4
CS 316, 317 8

Students wishing to learn about microprocessors may wish to take further courses in computer engineering, such as CEG 260, 320, and 360. For such students, CEG 430 and 431 may be taken in place of CS 316 and 317.
Degree Requirements—Physics/Biology Option

Bachelor of Science Degree

The Department of Physics in cooperation with the Department of Biological Sciences offers a program leading to a Bachelor of Science degree in physics with a biology option. This option is designed for students who plan a physics career in a biology-related setting or who want to pursue graduate study in biophysics.

Students following the physics program with the biology option must meet the requirements of the basic physics degree program. In addition, the following courses are required:

**Biology Option Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 111, 112, 114</td>
<td>12</td>
</tr>
<tr>
<td>BIO 492 (biophysics emphasis)</td>
<td>12</td>
</tr>
<tr>
<td>CHM 211, 212</td>
<td>12</td>
</tr>
</tbody>
</table>

Electives chosen from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
</table>

**Physiology**

*Professors* Arlian, Glaser (acting chair), Johnson

*Associate Professors* Gotshall, Miles, Nussbaum, Sernka

*Assistant Professors* Goldfinger, Mechlin

*Voluntary Assistant Professor* Barr

*Instructor* Weisman

The Department of Physiology provides a curriculum serving the needs of students who are planning to enter into medicine, nursing, or other health-related professions. Although the department does not offer a degree in physiology, a student may develop a heavy concentration in physiology as part of the Bachelor of Science degree in biological sciences. The Department of Physiology will advise students desiring a concentration in this medically oriented discipline.

**Psychology**

*Professors* Crampton, H. Klein, S. J. Klein, Kurdek, Wilson

*Associate Professors* Campbell, Colle, Davis, Kruger, Moss (chair), Page, Stericker, Ward

*Assistant Professors* Chambers, Eggemeier, Hennessy, Wagar (WOBC), Weber

The Department of Psychology offers programs leading to the Bachelor of Science and the Bachelor of Arts degrees. Both degree programs are designed to give the student a broad introduction to contemporary psychology. The Bachelor of Arts curriculum permits the greatest flexibility in selecting electives within and outside of psychology.

The Bachelor of Science program is recommended for students planning careers in academic, research, or professional fields. The Bachelor of Arts program may also be suitable for these goals; requirements for graduate schools vary considerably. Programs should be supplemented with additional courses which are selected to meet individual goals. Students should obtain a copy of the booklet *Preparation for Graduate Study* from the psychology department and consult with their departmental advisers.

Graduate schools expect applicants to have a background in introductory or general psychology, experimental psychology with laboratory, and statistics. Beyond these courses, there are few specific requirements. Students planning to apply to graduate schools should seek a broad background in psychology rather than highly specialized undergraduate training. A basic curriculum should include courses in introductory psychology, statistics and experimental design, laboratory courses, survey courses in the major content areas, and a few advanced electives.

The following courses are suggested for the freshman year: PSY 111, 112, BIO 111, 112, 114; MTH 127 or 129; ENG 111, 112; and selected courses from General Education Area Three. Following the freshman year, students are advised to obtain supplementary materials from the department and to work closely with their assigned advisers. Credit hours in psychology may not be less than sixty-five for a Bachelor of Arts and seventy-three for a Bachelor of Science degree.

**Psychology Honors Program**

Application for admission to the program should be made before the beginning of the senior year. Students usually apply at the end of the sophomore year. After acceptance, students enroll in one departmental honors seminar each academic year. Part-time students must complete one honors seminar prior to graduation. Each student must complete an honors thesis, for which academic credit is granted.
Degree Requirements—Psychology/Academic Concentration

Bachelor of Arts Degree

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>47</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>65</td>
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<tr>
<td>PSY 111, 112</td>
<td>8</td>
</tr>
<tr>
<td>PSY 300</td>
<td>5</td>
</tr>
<tr>
<td>Four of the following (at least one from each group):</td>
<td></td>
</tr>
<tr>
<td>PSY 311, 331, 341, 351</td>
<td>16</td>
</tr>
<tr>
<td>PSY 321, 361, 371, 391</td>
<td>16</td>
</tr>
<tr>
<td>Sixteen hours of 400-level electives in psychology</td>
<td></td>
</tr>
<tr>
<td>Electives in psychology</td>
<td>20</td>
</tr>
<tr>
<td>Related Course Requirements</td>
<td>9-10</td>
</tr>
<tr>
<td>STT 164, 265</td>
<td>6</td>
</tr>
<tr>
<td>One additional course in Science and Engineering outside psychology</td>
<td>3-4</td>
</tr>
<tr>
<td>Electives</td>
<td>61-62</td>
</tr>
<tr>
<td>Total (minimum requirement)</td>
<td>183</td>
</tr>
</tbody>
</table>

Degree Requirements—Psychology

Bachelor of Science Degree

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>47</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>73</td>
</tr>
<tr>
<td>PSY 111, 112</td>
<td>8</td>
</tr>
<tr>
<td>PSY 300, 400</td>
<td>9</td>
</tr>
<tr>
<td>Five of the following (at least two from each group):</td>
<td></td>
</tr>
<tr>
<td>PSY 311, 331, 341, 351</td>
<td>20</td>
</tr>
<tr>
<td>PSY 321, 361, 371, 391</td>
<td>16</td>
</tr>
<tr>
<td>Two courses from the following:</td>
<td></td>
</tr>
<tr>
<td>PSY 323, 333, 343, 353, 363, 373, 393</td>
<td>8</td>
</tr>
<tr>
<td>Sixteen hours of 400-level electives in psychology</td>
<td></td>
</tr>
<tr>
<td>Electives in psychology</td>
<td>12</td>
</tr>
<tr>
<td>Related Course Requirements</td>
<td>17</td>
</tr>
<tr>
<td>MTH 128 or 129; STT 164, 265</td>
<td>9</td>
</tr>
<tr>
<td>CS 141</td>
<td>4</td>
</tr>
<tr>
<td>CS 142 or PSY 401</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>46</td>
</tr>
<tr>
<td>Total (minimum requirement)</td>
<td>183</td>
</tr>
</tbody>
</table>

Human Factors Psychology Concentration

All requirements for the Bachelor of Science degree apply. Additional requirements can be met without exceeding the 183 hours required for graduation, if planning begins early. A complete description of this concentration can be obtained in the departmental office. Participation in this concentration is by application only.
Nursing
The nursing program, which leads to a Bachelor of Science in Nursing degree, is designed to suit students’ individual needs. A complete program is offered for registered nurses seeking a B.S.N. An honors program is available for students with high academic ability.

The nursing program at Wright State is accredited by the National League for Nursing and is approved by the State of Ohio Board of Nursing Education and Nurse Registration. Graduates of the program are eligible for the State Board Test Pool Examination.

Admission and Promotion

The baccalaureate program in nursing is an upper division major. Admission to Wright State does not automatically ensure admission to the School of Nursing.

Students are admitted to the School of Nursing on a competitive basis. The number of students accepted for admission is limited by the availability of resources for quality education. Students must show proof of high school graduation or its equivalent and be admitted to Wright State University as a matriculant (degree-seeking) student to be considered for admission to the School of Nursing.

All entering students must receive a grade of C or better in anatomy, physiology, nutrition, biology, chemistry, pharmacology, microbiology, pathophysiology, and mathematics to meet prerequisite requirements for the clinical nursing courses. Also, all students must have a cumulative grade point average of at least 2.5 to enter the School of Nursing.

Students are required to earn a grade of C or better in all nursing courses. Grades in these courses are based on the student’s performance in both the classroom and in the clinical laboratory. A satisfactory grade in both classroom and clinical laboratory work must be achieved to pass the course. Students must maintain a 2.0 total cumulative grade point average to continue in nursing courses.

Admission Criteria

New Freshman Students

All new students interested in nursing, except RNs, will be admitted to the university as prenursing students and advised in the University Division until they meet the criteria for transfer to the School of Nursing as prenursing students. These criteria are successful completion of ENG 111, 112; PSY 111, 112; SOC 111; CHM 101, 102; BIO 112; MTH 102 (unless waived); COM 102; and a cumulative grade
point average of 2.5 or higher. Once transferred as prenursing students to the School of Nursing, students must complete additional criteria for admission to the School of Nursing. These criteria are successful completion of ANT 201, 202; PHS 218, 219, 403; M&I 220; SOC 360; PSY 311, 341; BCH 250; NUR 205, 211; and a cumulative grade point average of 2.5 or higher.

**Transfer Students**

Transfer students must meet the same requirements as the new freshman student. If students do not have the necessary prerequisites, they will be admitted as prenursing students and advised in the University Division until they meet the requirements for transfer into the School of Nursing. Transfer students with baccalaureate nursing credits from another accredited nursing program will have their nursing credits evaluated in the School of Nursing. Once transferred as prenursing students to the School of Nursing, students must complete additional criteria for admission to the School of Nursing. These criteria are successful completion of ANT 201, 202; PHS 218, 219, 403; M&I 220; SOC 360; PSY 305, 341; BCH 250; NUR 205, 211; and a cumulative grade point average of 2.5 or higher.

**Students Who Are Registered Nurses**

Students who are registered nurses must meet the criteria for admission to the RN/BSN completion track. These criteria are successful completion of ENG 111, 112; MTH 102; CHM 101, 102; PSY 111, 112, 305, 341; SOC 111; COM 102; ANT 201, 202; M&I 220; or their equivalents; and a cumulative grade point average of 2.5 or higher.

**Health Certification, Transportation, and Insurance**

All students must be certified by a physician to be of good health and capable of actively participating in clinical experiences before they enter clinical nursing courses. This certification must be repeated each year.

Students must provide their own transportation to all clinical facilities and all students in clinical nursing courses must carry liability and health insurance. Forms are available in the School of Nursing office.

**Nursing**

**Honors Program**

Students with high academic ability may participate in the honors program, which emphasizes independence, self-direction, and in-depth study in an area of interest to the student.

Applications must be made on an honors program application form available in the School of Nursing office. To be eligible, the student must have a 3.2 or better grade point average for the forty-five credit hours immediately preceding the winter quarter of the student’s junior year. Final approval for participation is given by the Honors Committee of the School of Nursing.

**Curriculum Requirements**

In the following curriculum, it is essential that students take designated courses in sequence, especially the upper division nursing courses.

**Plan of Study I**

**Freshman Year**

<table>
<thead>
<tr>
<th>First, Second, Third, and Fourth Quarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
</tr>
<tr>
<td>ENG 112</td>
</tr>
<tr>
<td>SOC 111</td>
</tr>
<tr>
<td>PSY 111</td>
</tr>
<tr>
<td>PSY 112</td>
</tr>
<tr>
<td>MTH 102 or equivalent**</td>
</tr>
<tr>
<td>CHM 101 or 121</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>Fifth, Sixth, Seventh, and Eighth Quarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHS 218*</td>
</tr>
<tr>
<td>PHS 219*</td>
</tr>
<tr>
<td>PHS 403</td>
</tr>
<tr>
<td>BCH 250</td>
</tr>
<tr>
<td>PSY 311</td>
</tr>
<tr>
<td>PSY 341</td>
</tr>
<tr>
<td>SOC 360</td>
</tr>
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</table>

**Junior Year**

<table>
<thead>
<tr>
<th>Ninth, Tenth, Eleventh, and Twelfth Quarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 312*</td>
</tr>
<tr>
<td>NUR 313*</td>
</tr>
<tr>
<td>NUR 304*</td>
</tr>
<tr>
<td>NUR 411*</td>
</tr>
<tr>
<td>NUR 412*</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>Thirteenth Quarter</th>
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</thead>
<tbody>
<tr>
<td>NUR 413*</td>
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<tr>
<td>Humanities elective</td>
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Plan of Study II

Freshman Year
First, Second, and Third Quarters

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
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</tr>
<tr>
<td>ENG 112</td>
<td>4</td>
</tr>
<tr>
<td>SOC 111</td>
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<tr>
<td>PSY 111</td>
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<tr>
<td>PSY 112</td>
<td>4</td>
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<tr>
<td>SOC 360</td>
<td>4</td>
</tr>
<tr>
<td>COM 102</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ENG 111</td>
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<tr>
<td>ENG 112</td>
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<td>SOC 111</td>
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</tr>
<tr>
<td>SOC 360</td>
<td>4</td>
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<tr>
<td>COM 102</td>
<td>3</td>
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</table>

Sophomore Year
Fourth, Fifth, Sixth, and Seventh Quarters

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ANT 201</td>
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<tr>
<td>ANT 202</td>
<td>4</td>
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<tr>
<td>PHS 218</td>
<td>5</td>
</tr>
<tr>
<td>PHS 219</td>
<td>5</td>
</tr>
<tr>
<td>M&amp;I 220</td>
<td>5</td>
</tr>
<tr>
<td>BCH 250</td>
<td>4</td>
</tr>
<tr>
<td>PSY 311</td>
<td>4</td>
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<tr>
<td>PSY 341</td>
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Junior Year
Eighth, Ninth, and Tenth Quarters

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHS 403</td>
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</tr>
<tr>
<td>BCH 340</td>
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</tr>
<tr>
<td>Free elective</td>
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<td>NUR 498* or free elective</td>
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Senior Year
Eleventh, Twelfth, and Thirteenth Quarters

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<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 411</td>
<td>10</td>
</tr>
<tr>
<td>NUR 412</td>
<td>10</td>
</tr>
<tr>
<td>NUR 413</td>
<td>10</td>
</tr>
</tbody>
</table>

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Degree Requirements

Bachelor of Science in Nursing Degree

General Education and Related Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 112*</td>
<td>4</td>
</tr>
<tr>
<td>CHM 101</td>
<td>4.5</td>
</tr>
<tr>
<td>CHM 102</td>
<td>4</td>
</tr>
<tr>
<td>MTH 102 or equivalent</td>
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</table>

Supporting Courses

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MTH 102 or equivalent</td>
<td>68</td>
</tr>
<tr>
<td>BIO 112 (if not waived)</td>
<td>75</td>
</tr>
<tr>
<td>CHM 102 or 121, 102</td>
<td>75</td>
</tr>
<tr>
<td>ANT 201, 202</td>
<td>75</td>
</tr>
<tr>
<td>PHS 218, 219, 403</td>
<td>75</td>
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<tr>
<td>BCH 250 (Nutrition)</td>
<td>75</td>
</tr>
<tr>
<td>M&amp;I 220</td>
<td>75</td>
</tr>
<tr>
<td>BCH 340 (Pharmacology)</td>
<td>75</td>
</tr>
<tr>
<td>PSY 111, 112, 311, 341</td>
<td>75</td>
</tr>
<tr>
<td>SOC 111, 360</td>
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Humanities

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENG 111, 112</td>
<td>35</td>
</tr>
<tr>
<td>COM 102</td>
<td>35</td>
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</tbody>
</table>

Philosophy, religion, political science, anthropology electives, and electives as listed in Area Three, Group B of General Education requirements approved by School of Nursing.

Nursing Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 205</td>
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<tr>
<td>NUR 311*</td>
<td>9</td>
</tr>
<tr>
<td>NUR 312*</td>
<td>9</td>
</tr>
<tr>
<td>NUR 313*</td>
<td>9</td>
</tr>
<tr>
<td>NUR 304*</td>
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Free Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Free elective</td>
<td>12-19</td>
</tr>
</tbody>
</table>

Total

| Credits | 192 |

RN/BSN Completion Program

Wright State University offers an RN/BSN completion program for registered nurses. Of the 192 credits required for graduation, students will be required to enroll in a minimum of ninety credit hours at Wright State. Approximately half of these credits will be in nursing courses, the other half in the humanities and advanced sciences.

A series of three nursing courses (fifteen credit hours) assists registered nurses in the transition to baccalaureate nursing education. These transition courses, designed to build on the competencies of registered nurses, are taken during the junior year and include concepts from the five parallel nursing courses taken by generic baccalaureate students. Upon entering their senior year, these registered nurses will enroll in the regular senior-level courses designed for all baccalaureate nursing students.

Associate degree graduates with a major in nursing may complete all the requirements for the Bachelor of Science in Nursing degree at Wright State University in two calendar years of full-time study. Diploma graduates without university credits will require a longer period of study to complete all credit hours necessary for graduation.
Philosophy

The School of Nursing supports Wright State University’s purposes of teaching, research, and service. The faculty believes in the acquisition of knowledge from the past and present, as well as exploration of new knowledges, in the advancement of lifelong learning, the search for basic truth, and in the commitment of the university to solution of problems affecting the larger community.

Human existence involves behavioral patterns, constant change, and interaction with biological, psychological, social, spiritual, and other forces in the environment. Although human existence contains elements of similarity, each person is the product of a unique genetic heritage in continuous and dynamic interaction with unique life experiences. Humanity is viewed in terms of ability to act and react in relation to a continuous process of change resulting in increasing complexity. Each individual functions within a set of values with the potential to be a thinking, creative, dignified, rational being.

Society within the human environment is composed of individuals, families, groups, and communities sharing a variety of common goals and values which change as the interests and needs of the members change. Social change evolves through the mutuality of relationships and the interaction of political and social forces which affect the individual’s rights, responsibilities, and obligations. These dynamic forces determine the values and expectations placed upon the health care system as an integral part of society. The individual’s interaction with the health care system is a reciprocal experience.

Health is the dynamic pattern of functioning whereby there is continued interaction with internal and external forces in an attempt to achieve the goal of maximum health potential. Health is influenced by inherent capabilities, growth and development, culture, and totality of perception. Human dignity and the quality of life are influenced by the degree of vulnerability to health impairments and depletions. The availability of a variety of resources will influence health and serve to decrease vulnerability.

The practice of professional nursing is humanitarian in nature and requires a knowledge base in nursing. The integration of scientific, humanistic, and nursing concepts and theories, attainable through research, gives direction to this practice. The nursing process is interpersonal and caring in nature. In its totality it includes assessment, diagnosis, planning, implementation, and evaluation, and is the essence of professional practice. The nursing process is utilized with individuals and groups to maximize their potential for health.

The emerging role of the nurse practitioner involves a greater amount of independence in practice and an increasing accountability to the consumer of health and nursing care. This can be achieved through individualized care given on a continuous basis over an extended period of time. The professional nurse will increasingly be viewed as the nucleus of the health care system, as well as an advocate for the consumer. Through leadership and interaction skills, the nurse will act in consortium with the client and other health and nursing practitioners for health promotion and maintenance.

The baccalaureate program in nursing prepares a self-directed practitioner with a breadth of knowledge in nursing who functions as a generalist in a variety of health care settings. This practitioner is capable of functioning as a leader and as an initiator of change in the care-giving situation; supporting change within the health care system; coordinating and collaborating with consumers and interdisciplinary health team members; and utilizing selected theories, concepts, and research findings. Experiences are provided to help students define their role and develop personal and professional values and clinical competencies. This baccalaureate program provides the base for master’s preparation in nursing.

Graduate nursing education, based on the first professional degree, the Bachelor of Science in Nursing, prepares the graduate for the advanced application of theory to professional practice. As a practice profession, nursing is based on the utilization of theories to describe the unique relationships among persons and their health status. Advanced practitioners of nursing are prepared to use analytical skills in applying theories to practice for a variety of roles and functions in specialized settings. Inquiries emerge from professional nursing practice which in turn form the essence of nursing research.

Learning is a dynamic, lifetime growth process of behavioral changes which involves the development of maximum potential through a spirit of inquiry and self-motivation. Learning is a sequential process and combines cognitive, affective, and psychomotor components. The learner has responsibility for independence, self-direction, and reaching a level of self-realization. The educator has responsibility for determining and implementing quality education which is accomplished through sharing, counseling, guiding, and challenging. The educator and learner in nursing must continually evolve a greater understanding of the relationships among theory, research, and practice. This understanding facilitates the development of nursing theory and practice, provides a climate conducive to intellectual pursuits, contributes productively toward highest standards of teaching, and encourages independent thought and creative endeavors.
Characteristics of the Graduate

The characteristics of the graduate are stated as broad, descriptive objectives to focus the philosophy's concepts of humanity, society, health, professional nursing, and learning. These objectives are viewed by the faculty as representative of a commitment to quality nursing care, to the student, and to the consumer of health care. These objectives serve as essential guidelines to the faculty and students, especially in matters relating to the curriculum such as the development of level and course objectives. The graduate will be able to:

1. Assess and diagnose the health status of individuals, families, and communities; plan, implement, and evaluate nursing care in any setting within and outside the health care delivery system.

2. Synthesize theories and/or concepts related to the arts, sciences, and nursing into practice as a professional nurse.

3. Provide professional nursing care based on an understanding of the evolving patterns and a recognition of the uniqueness of clients in relation to their health status and potential.

4. Incorporate the interpersonal process to assist individuals, families, and communities to maximize their potential for health.

5. Function as the nucleus of the health care delivery systems utilizing leadership and interactive concepts and theories to coordinate and collaborate on matters related to the nursing care.

6. Accept a personal philosophy of professional nursing that incorporates professional responsibility and accountability to, and advocacy for, the consumer of nursing care.

7. Recognize the impact of environmental forces on the health care delivery system.

8. Utilize the change process to influence environmental forces toward improving health and nursing care as it relates to the emerging role of the professional nurse.

9. Demonstrate responsibility for self-direction in lifelong learning by participating in activities that contribute to personal and professional growth.

10. Utilize nursing research to improve practice and gather reliable and accurate data to extend nursing science.
Western Ohio Branch Campus
Western Ohio Branch Campus

The Western Ohio Branch Campus (WOBC/WSU) became a part of Wright State University in July 1969. Classes were held in downtown Celina until September 1972, when a new campus, located on the north shore of Grand Lake St. Marys between Celina and St. Marys, was opened. Dwyer Hall, the first building on the new campus, contains laboratories, classrooms, faculty and administrative offices, the library, an auditorium, and student service facilities.

Two new buildings were added in 1980. Andrews Hall contains an electronics engineering lab, two secretarial and business labs, and the mechanical drafting design engineering technology lab. Ternary Lab houses the manufacturing engineering technology lab.

The 173-acre campus and its facilities are the result of a state appropriation and the contributions of many individuals and groups in the surrounding communities who sought to provide opportunities for youth and adults in the area to pursue university work of high quality at a reasonable cost. The location of the campus enables many students to obtain an associate degree or to earn approximately half their baccalaureate degree requirements without extensive commuting and to hold part-time jobs while in attendance. Students who do not plan to complete a degree program can further their education through selected courses of individual interest. Classes are scheduled during both day and evening hours.

The mission of the Western Ohio Branch Campus of Wright State University is to offer postsecondary education within a reasonable commuting distance to any interested student. Since its mission is to serve all types of students, WOBC offers prebaccalaureate and two-year technical programs as well as other selected credit and noncredit courses as needed.

A wide selection of courses covering the first two years is available in the humanities, the social sciences, the sciences, mathematics, education, and business. Selected courses at the junior, senior, and graduate levels are offered based upon demand, library resources, and the availability of qualified faculty. Noncredit courses are offered to the community at a nominal charge when there is sufficient demand and available space.

The Western Ohio Branch Campus has a highly qualified resident faculty of sufficient size to provide instructors for nearly all courses offered, and some courses are taught by qualified adjunct instructors. Academic advising and counseling services are available at the branch campus.
The WOBC/WSU has its own student government which initiates, supports, and supervises extracurricular activities. The student government helps sponsor the College Community Arts Program which brings to the campus outstanding musical, dramatic, lecture, and film presentations. The athletic teams compete against other branch campuses and technical colleges in Ohio and junior colleges in Indiana.

**Associate of Arts Degree**

The Western Ohio Branch Campus offers a two-year Associate of Arts degree program that introduces the student to the major disciplines of the humanities, the natural and social sciences, and mathematics. The program includes the university’s General Education requirements. There is sufficient flexibility to permit students to tailor their programs to provide the background required for baccalaureate degree programs at Wright State University or for transfer to another college or university. Area concentrations are available in the humanities and social sciences, business and administration, community/rehabilitation services, and several areas of specialization in the sciences. Specific requirements for the Associate of Arts program are available from the branch campus office.

Students may choose to complete a foreign language or an optional research methods requirement. To satisfy the foreign language requirement, a student must demonstrate proficiency in a foreign language either by satisfactorily completing five quarters of course work or by examination at an equivalent level. To satisfy the research methods option, a student must fulfill the following requirements (Sections I and II must be completed at the branch campus):

**Section I**
- STT 164/165 and STT 265/266

**Section II**
- AIS 103 and CS 300 or CS 141 and 142 or CS 141 and CS 300

**Section III**
- To be completed during the last two years of study

Humanities and social science electives are to be chosen from the approved list of courses which fulfill General Education requirements.

**Requirements for the Associate of Arts Degree**

### Biological Sciences

**Freshman Year**
- BIO 101, 102, 114; CHM 121, 122, 141
- ENG 111, 112; MTH 130; humanities and social science electives

**Sophomore Year**
- BIO 202, 206; elective; CHM 211/215, 212, 213
- PHY 111/101, 112/102, 113/103; communication elective; humanities and social science electives

### Business and Administration

**Freshman Year**
- ACC 201, 202, 203; ADM 101; COM 203; ENG 111, 112, 330; lab science sequence; LCS 210; MTH 129, 224, 226; social science elective

**Sophomore Year**
- AIS 103; CS 205; EC 201, 202, 203; TAD 232; TMG 201; TMK 201, 202, TQB 210; humanities and social science electives

### Chemistry

**Freshman Year**
- CHM 121, 122, 141; ENG 111, 112; MTH 132, 133, 231; foreign language, social science elective

**Sophomore Year**
- CHM 211/215, 212/216, 213/217; PHY 111/101, 112/102, 113/103; PSY 111, 112; foreign language; communication elective; social science elective

### Communication

**Freshman Year**
- COM 101, 102, 203; ENG 111, 112; lab science sequence; elective; Language 101; 102, 103, or research methods

**Sophomore Year**
- COM 111, 141, 233, 252; ENG 330; SOC 111, 112; electives; Language 201, 202, or research methods; social science elective

### Community/Rehabilitation Services

**Freshman Year**
- ENG 111, 112; MTH 127; PSY 111, 112, 341; RHB 201, 202; SOC 111, 112; lab science sequence

**Sophomore Year**
- COM 102, PSY 200, 351; RHB 213, 214, 223; SOC 320, 332; elective; humanities electives
### Economics

**Freshman Year**
- ENG 111, 112; GEO 103; MTH 129, 224, 226;
- SOC 111, 112; Language 101, 102, 103 or AIS 103;
- CS 141, 142; humanities elective

**Sophomore Year**
- ACC 201, 202, 203; EC 201, 202, 203; QBA 201, 202; Language 201, 202, or electives; lab science sequence; electives

### English

**Freshman Year**
- COM 101, 102; ENG 111, 112; PSY 111; lab science sequence; Language 101, 102, 103, or research methods; social science elective

**Sophomore Year**
- ENG 210, 211, 212, 255, 256, 497; HST 121, 122; Language 201, 202, elective or research methods; social science elective

### Geography

**Freshman Year**
- ENG 111, 112; GEO 101, 102, 103; GL 101, 102, 103; Language 101, 102, 103; elective

**Sophomore Year**
- EC 201, 202, 203 or sociology sequence (three courses); GEO 285, 365, 370; Language 201, 202; electives

### Geological Sciences

**Freshman Year**
- ENG 111, 112; GEO 101, 322; elective; GL 101, 102, 103; MTH 132, 133; humanities elective; free elective

**Sophomore Year**
- CHM 121, 122, 141; GL 203, 330, 331, or elective; PHY 111/101, 112/102, 113/103; communication elective; humanities and social science electives

### History

**Freshman Year**
- ENG 111, 112; HST 111, 112; elective; Language 101, 102, 103, or research methods; elective; lab science sequence

**Sophomore Year**
- HST 121, 122; elective; SOC 111, 112, elective; Language 201, 202, or research methods; geography or economics electives; free electives

### Mathematics

**Freshman Year**
- ENG 111, 112; MTH 132, 133, 231; PHY 111/101, 112/102, 113/103; PSY 111; SOC 111; humanities electives

**Sophomore Year**
- CS 141, 142; EC 201, 202, 203; MTH 232, 233, 280; communication and humanities electives; free electives

### Psychology

**Freshman Year**
- ENG 111, 112; MTH 129; PSY 111, 112; SOC 111, 112; STT 164/165, 265/266; lab science sequence

**Sophomore Year**
- CS 141, 142; PSY 200, 341, 351; SOC 320, 332; communication elective; humanities and social science electives

### Social and Industrial Communication

**Freshman Year**
- ATH 140; COM 101, 102, 203; ENG 111, 112; SOC 111, 112, 206; Language 101, 102, 103, or research methods

**Sophomore Year**
- COM 141, 233; SOC 350, 442; TMG 201; lab science sequence; Language 201, 202, or research methods; social science electives

### Social Work

**Freshman Year**
- ATH 140, 141; ENG 111, 112; SOC 111, 112; lab science sequence; Language 101, 102, 103, or research methods; communication elective

**Sophomore Year**
- COM 102; EC 201; PSY 111, 112; RHB 213, 214; SOC 332; SW 270, 280; Language 201, 202, or research methods; humanities electives

### Sociology

**Freshman Year**
- ATH 240; ENG 111, 112; PSY 111, 112; SOC 111, 112; lab science sequence; Language 101, 102, 103, or research methods

**Sophomore Year**
- ATH 140; PSY 200, 341; SOC 320, 332; Language 201, 202, or research methods; communication elective; social science elective; electives
Associate of Science Degree

The Western Ohio Branch Campus offers a two-year Associate of Science degree program that prepares students to pursue a Bachelor of Science degree program in biology, chemistry, geology, groundwater, mathematics, and psychology. Specific requirements for each program are available from the branch campus office. The program includes the university's General Education requirements. There is sufficient flexibility to permit students to tailor their programs to provide the background required for baccalaureate degree programs at Wright State or for transfer to another college or university.

Humanities and social science electives are to be chosen from the approved list of courses which fulfill General Education requirements.

Requirements for the Associate of Science Degree

Biological Sciences

Freshman Year
BIO 101, 102, 114; CHM 121, 122, 141; ENG 111, 112; MTH 132, 133, 231; social science elective

Sophomore Year
BIO 202, 206, elective; CHM 211/215, 212/216, 213/217; COM 141; PHY 111/101, 112/102, 113/103; humanities elective

Chemistry

Freshman Year
BIO 101, 102, 114*; CHM 121, 122, 141; ENG 111, 112; MTH 132, 133, 231; social science elective

Sophomore Year
BIO 202*; CHM 211/215, 212/216, 213/217; PHY 111/101, 112/102, 113/103, PSY 111, 112; communication elective; humanities and social science electives

*These courses partially fulfill pre-med requirements. Students not considering a medically related career should substitute a foreign language.

Geological Sciences

Freshman Year
CS 141, 142; ENG 111, 112; GEO 101, 322; GL 101/104, 102/105; MTH 132, 133; humanities and social science electives

Sophomore Year
CHM 121, 122, 141; COM 101 or 141; GL 203, 330; PHY 111/101, 112/102, 113/103; humanities and social science electives; free elective

Mathematics

Freshman Year
ENG 111, 112; MTH 132, 133, 231; PHY 111/101, 112/102, 113/103, PSY 111; SOC 111; communication elective; free elective

Sophomore Year
CS 141, 142; EC 201, 202, 203; MTH 232, 233, 280; humanities electives; electives

Psychology

Freshman Year
ENG 111, 112; MTH 129; PSY 111, 112; SOC 111, 112; STT 164/165, 265/266; lab science sequence

Sophomore Year
CS 141, 142; PSY 200, 341, 351; SOC 320, 332, elective; communication elective; humanities and social science electives

Technical Programs

Two-year technical education programs leading to the associate degree in applied business or science are offered at the Western Ohio Branch Campus. Graduates of the technology programs will be qualified to work in industry, business, or service organizations. Specialized courses in real estate, banking, and insurance are available.

Humanities and social science electives are to be chosen from the approved list of courses which fulfill General Education requirements.

Admission

Students seeking admission to technical programs offered at the Western Ohio Branch Campus are not required to meet Wright State University main campus admission requirements. However, it is highly recommended that students take college preparatory courses in high school.
Requirements for the Associate of Applied Business Degree

Accounting Technology
Freshman Year
ADM 101; AIS 103; CS 205; EC 201, 202; ENG 111, 112; TAC 201, 202, 203; TEN 116; TMT 110, 111; humanities and technical electives

Sophomore Year
COM 203; TAC 210, 211, 220, 221, 225, 280, 299; TAD 232; TFI 205; TMG 201; TQB 210; general, humanities, social science, and technical electives

Business Management Technology/Management Option
Freshman Year
ADM 101; AIS 103; EC 201, 202; ENG 111, 112; TAC 201, 202, 203; TMG 201, 210; TMT 110, 111; basic and technical electives

Sophomore Year
COM 203; TAD 232; TEN 116; TFI 205; TMG 202, 290, 299; TMK 201, 202; TQB 210; humanities, social science, and technical electives

Business Management Technology/Retail Marketing Option
Freshman Year
ADM 101; AIS 103; COM 203; EC 201, 202; ENG 111, 112; TAC 201, 202, 203; TAD 232; TMG 201, 210; TMT 110, 111

Sophomore Year
TEN 116; TFI 205; TMK 201, 202, 210, 220, 228, 240, 290, 299; TQB 210; humanities, social science, and technical electives

Data Processing Technology
Freshman Year
ADM 101; AIS 103; EC 201, 202; ENG 111, 112; TAC 201, 202; TDP 121, 122; TMG 201, 270; TMT 110, 111; humanities or social science elective

Sophomore Year
COM 203; TDP 130, 145, 221, 222, 230, 252, 299; TEN 116; TFI 205; TQB 210; humanities or social science elective; technical elective

Executive Secretarial Technology
Freshman Year
ADM 101; AIS 103; ENG 111, 112; TAC 201; TEN 115; TOA 201, 202, 203, 211, 212, 213, 235, 237; elective

Sophomore Year
COM 203; EC 201; TAD 232; TOA 221, 222, 231, 232, 233, 250, 299; basic, humanities, or social science electives; technical elective

Legal Secretary Technology
Freshman Year
ADM 101; ENG 111, 112; TAC 201; TAD 232; TEN 115; TOA 201, 202, 203, 211, 212, 213, 235, 237; elective

Sophomore Year
AIS 103; EC 201; TOA 221, 222, 231, 232, 233, 251, 299; basic, humanities, or social science electives; technical elective

Medical Secretary Technology
Freshman Year
BIO 101, 103; ENG 111, 112; TAC 201; TEN 115; TOA 201, 202, 203, 211, 212, 213, 235, 237

Sophomore Year
ADM 101; AIS 103; EC 201; PSY 111, 112; TAD 232; TOA 221, 222, 231, 232, 233, 252, 299; humanities or social science elective; general elective; technical elective

Requirements for the Associate of Applied Science Degree

Electronics Engineering Technology
Freshman Year
ENG 111, 112; TDP 130; TEG 148, 160, 161, 210, 240; TMT 113, 114, 115; TPH 111, 112; humanities or social science elective

Sophomore Year
TEG 220, 221, 230, 232, 241, 242, 243, 299; TEN 118; TMT 116, 138; humanities or social science electives; technical elective

Manufacturing Engineering Technology
Freshman Year
ENG 111; TEG 145, 146, 150, 151, 152, 226; TEN 118; TMT 113, 114, 115; TPH 111; communication elective

Sophomore Year
TEG 153, 160, 201, 202, 203, 204, 209, 212, 218, 299; TMG 201; TMT 116; technical elective; humanities or social science electives
Mechanical Drafting/Design Engineering Technology

Freshman Year
ENG 111, 112; TEG 141, 145, 146, 147, 212;
TMT 113, 114, 115; TPH 111, 112; general elective;
technical elective

Sophomore Year
TEG 150, 160, 170, 201, 202, 203, 204, 205, 209,
299; TEN 118; TMT 116; communication elective;
humanities or social science electives

Requirements for the Associate Degree in Law Enforcement Technology

Cooperative Program with Lima Technical College

Freshman Year
ACC 201; AIS 103; COM 101; ENG 111, 112;
HST 112; PSY 111, 112, 200; SOC 111, 112, 320,
332; TMT 110, 111; TOA 211

Sophomore Year at Lima Technical College
LE 110, 111, 112, 120, 121, 154; 155, 201, 202, 203,
204, 210, 221, 251, 253, 256, 257, 258, 259; GS 151
Course Descriptions
Courses/Accountancy

Please see page 5 for a list of course abbreviations and page 6 for an explanation of the course numbering system.

Accountancy/ACC

201-3, 202-3, 203-3 Accounting Concepts and Principles I, II, III
Introduction to accounting for business enterprises; includes preparation and analysis of financial statements and reports for managers and other users. Must be taken in sequence.

231-3 Income Tax Planning
Individual and business decisions involving federal income taxes. Not open to business and administration majors.

Advanced Courses

All courses listed below require junior standing, in addition to the listed prerequisites.

300-3 Accounting for Managerial Analysis
Analysis and interpretation of accounting information for management in the functions of planning, control, and decision making. Credit will not be granted to students with credit for ACC 321. Not open to accountancy majors. Prerequisite: ACC 203.

Development of financial accounting theory and its application to complex problems in the valuation of balance sheet accounts, determination of net income, and preparation of financial statements. Must be taken in sequence. Prerequisite: ACC 203.

321-3 Management Accounting I
Concepts, techniques, and detailed accounting procedures for the manufacturing firm. Prerequisite: ACC 203.

322-3 Management Accounting II
Application of cost accounting concepts and techniques to complex problems in manufacturing accounting and to other areas, including distribution costs and research and development costs. Prerequisite: ACC 203.

331-3 Income Tax Accounting I
History, theory, and basic tax structure pertaining to individuals and business. Prerequisite: ACC 203.

332-3 Income Tax Accounting II
Corporate, partnership, estate, gift, social security, and other federal taxes. Prerequisite: ACC 331.

407-3 Financial Accounting IV
Comprehensive study of partnerships and consolidated financial statements. Accounting for branch and foreign operations. Prerequisite: ACC 306.

411-3 Accounting Systems I
Fundamental concepts of information, communication, and systems which form the framework for the design of data processing and accounting systems. Prerequisite: ACC 306, 322; AIS 103.

412-3 Accounting Systems II
Application of accounting systems in handling principal business transactions and situations. Prerequisite: ACC 411.

421-3 Auditing I
Introduction to principles, standards, and procedures involved in conduct of an audit by the independent accountant. Prerequisite: ACC 306.

422-3 Auditing II
Application of auditing techniques with emphasis on the audit report and other special reporting problems. Consideration of management services and the auditor's responsibility to third parties. Prerequisite: ACC 421.

431-3 Governmental Accounting
Application of accounting principles to fund accounting for government units with consideration given to institutional accounting. Prerequisite: ACC 305, 321.

477-1 to 3 Special Studies in Accounting

478-3 Honors: Independent Study in Accountancy
Research in accounting for fulfillment of the Honors Program project requirement. Permission of department chair required.

481-6 Internship in Accounting
One quarter, faculty-supervised internship in the areas of public, industrial, or governmental accounting. Course requires semimonthly seminars and reports. Approval of Committee on Accounting Internship required.

498-3 Seminar in Management Accounting
Identification, description, and analysis of the behavioral science and quantitative methods applications for management accounting. Senior standing required. Prerequisite: ACC 306, 322.

499-3 Seminar in Financial Accounting
Identification and analysis of contemporary issues and problems in the area of financial accounting. Senior standing required. Prerequisite: ACC 322, 421.
Aerospace Science/Courses

**Administration/ADM**

101-3 *The World of Business and Administration*
Introduction to American business and its environment.

211-3 *Personal Law*
Understanding law dealing with people as individuals, rights and obligations pertaining to contracts, negligence, consumer problems, real and personal property, crimes, employment, insurance, the courts. Not open to business and administration majors.

**Advanced Courses**

All of the following courses require junior standing, in addition to the listed prerequisites.

350-3 *Business Law I*
Nature of law and legal systems. Torts, liability, contracts: essential elements.

351-3 *Business Law II*
Law of agency, partnerships, corporations, credit, and bankruptcy. May be taken after ADM 352. Prerequisite: ADM 350.

352-3 *Business Law III*
Law of property, sales, and commercial paper, including discussion of the Uniform Commercial Code. May be taken before ADM 351. Prerequisite: ADM 350.

477-1 to 4 *Special Problems*
Topics vary from quarter to quarter. Permission of instructor required.

480-3 *Special Topics in Business and Government*
Topics include current problems of interest and value in the area of business, such as government regulation of business, social responsibility of business, and legal problems in business.

483-3 *Business Enterprise and Social Issues*
Analysis of selected areas involving social issues and business.

**Administrative Information Systems/AIS**

103-3 *Introduction to Data Processing*
Data processing fundamentals and terminology pertinent to programming business systems. Students are required to write and test programs.

300-3 *Administrative Information Systems, Analysis and Design*
Teaches the student to analyze informational requirements, design systems that fulfill these requirements, and communicate them to others for implementation. Prerequisite: AIS 103, CS 200.

**Aerospace Science/AES**

121-1 *U.S. Military Forces I*

122-1 *U.S. Military Forces II*

123-1 *U.S. Military Forces III*

221-1 *Development of Aerospace Power I*
Explores the early development of air power until World War II. Studies center around the development of various concepts of air power employment and upon factors which have prompted research and technological change.

222-1 *Development of Aerospace Power II*
Explores the early development of air power from World War II through the Berlin airlift. Studies center around the development of various concepts of air power employment and upon factors which have prompted research and technological change.

223-1 *Development of Aerospace Power III*
Explores the development of air power from the Korean War until the present. Studies center around the development of various concepts of air power employment and upon factors which have prompted research and technological change.

331-3 *Aerospace Leadership and Management I*
Examines the Air Force manager's world and elements of the job. Examines leadership with emphasis on the insights provided by leadership research. Provides experience in exercising communicative skills necessary for effective management and leadership.

332-3 *Aerospace Leadership and Management II*
Examines leadership styles and research models. A thorough review of the implications of the styles in improving management techniques is conducted. Planning, organizing, controlling, and management-by-objectives are studied extensively.
### Courses/Aerospace Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>333-3</td>
<td><strong>Aerospace Leadership and Management III</strong></td>
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<tr>
<td></td>
<td>Examines the aspects of management, delineating the decision-making process as it relates to the individual and the group. Discusses organizational structure staffing, examines managerial strategy and tactics. Reviews manager's role in dealing with conflict/change.</td>
</tr>
<tr>
<td>392-2</td>
<td><strong>Fundamentals of Neurobiology Lab</strong></td>
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<tr>
<td></td>
<td>Development, structure (gross and microscopic), and functional relationships of the mammalian nervous system, including aspects of neuroendocrinology, neurochemistry, and comparative neurology. Permission of instructor required.</td>
</tr>
<tr>
<td>488-1</td>
<td><strong>Independent Reading</strong></td>
</tr>
<tr>
<td></td>
<td>Junior standing and departmental approval required.</td>
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<tr>
<td>491-4</td>
<td><strong>Fundamentals of Human Neurobiology</strong></td>
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<tr>
<td></td>
<td>Development, structure, and function of the human nervous system as it relates to neuropathology, clinical neurology, and behavioral science. Permission of instructor required.</td>
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<tr>
<td>499-1</td>
<td><strong>5 Selected Topics in Anatomy</strong></td>
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<tr>
<td></td>
<td>A maximum of four credit hours applicable toward degree requirements. May be taken for letter grade or pass/unsatisfactory. May be repeated to a maximum of 5 credit hours. Minimum 2.2 cumulative grade point average, junior standing, and departmental approval required.</td>
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### Anthropology/ATH

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>140-4</td>
<td><strong>Introduction to Cultural Anthropology</strong></td>
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<tr>
<td></td>
<td>Cultural development in various parts of the world; discussions of the different ways of life of contemporary peoples and the relationship between primitive and contemporary cultures.</td>
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<tr>
<td>141-4</td>
<td><strong>Introduction to Physical Anthropology</strong></td>
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<tr>
<td></td>
<td>The physical and biological nature of humans including primate behavior, evolution, genetics, and human variability.</td>
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<tr>
<td>142-4</td>
<td><strong>Introduction to Archaeology</strong></td>
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<tr>
<td></td>
<td>Introduction to the nature of archaeological data, techniques of archaeological dating, and methods of data collection, analysis, and interpretation.</td>
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<tr>
<td>200-4</td>
<td><strong>World of Primitive Contemporaries</strong></td>
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<tr>
<td></td>
<td>Survey of the non-Western cultures of the world with special emphasis on peoples more popularly known as our primitive contemporaries.</td>
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<tr>
<td>240-4</td>
<td><strong>Indians of North America</strong></td>
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<tr>
<td></td>
<td>Culture areas and cross-cultural characteristics of the North American Indian.</td>
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<tr>
<td>300-4</td>
<td><strong>Laboratory in Archaeology</strong></td>
</tr>
<tr>
<td></td>
<td>Emphasizes recognition and analysis of archaeological remains from prehistoric and historic sites. Students develop an original analysis of some body of archaeological material. Prerequisite: ATH 142 or 369.</td>
</tr>
</tbody>
</table>
340-4 Applied Anthropology: An Introduction
Designed to introduce various aspects of applied anthropology as currently utilized in a variety of behavioral activity fields locally, nationally, and internationally.

343-4 Indians of South America
A descriptive survey of South American Indian societies with special emphasis on their ecological adaptations and their attempts to survive in the twentieth century.

344-4 Latin American Peasant Society and Culture
A study of peasant society and culture in central and highland South America, with particular emphasis on economic strategies, social organization, world view, and adaptation to change.

346-4 Anthropology of Religion
(Listed jointly with Department of Religion; see REL 360.) Anthropological approach to meaning and function of religion in social life, and nature of thought or belief systems that give rise to different forms of religious life; emphasis on primitive and peasant societies.

349-4 Anthropological Linguistics
The science of language as an anthropologist's tool for field research. How to describe language as sound, and write an unwritten language; how the anthropologist can make use of linguistic training for acquiring cultural data.

351-4 Fossil Evidence for Human Evolution
History, description, and interpretation of the fossil record for primate evolution with emphasis on human evolution.

352-4 Primate Behavior
Detailed examination of the behavior of nonhuman primates (monkeys and apes) as it relates to human evolution and behavior.

358-4 Human Variation and Adaptation
Examination of biological variation in human populations focusing upon interpopulation variation, adaptation, and the concept of race.

363-4 Ancient Mexico: Olmecs, Maya, and Aztecs
Detailed examination of the major cultures and traditions of prehistoric Mexico and Guatemala, with emphasis on the Olmec, Maya, Toltec, and Aztec civilizations.

364-4 Ancient Peru: The Inca and Their Predecessors
Detailed examination of the major prehistoric cultures and traditions of the Andes, with special emphasis on the Inca civilization and its predecessors.

365-4 Archaeology of North America
A detailed examination of the major prehistoric cultures of North America. Emphasis is on eastern North American prehistory.

368-4 Archaeological Field Techniques
Classroom and field preparation for archaeological survey and excavations. Prerequisite: ATH 142.

369-6 to 12 Field School in Archaeology
Excavation training on prehistoric sites. Permission of instructor required. Offered summer session only.

392-2 to 4 Readings in Anthropology
May be taken for letter grade or pass/unsatisfactory. Departmental approval required.

396-2 Careers for Anthropology Majors
A student of peasant society and culture in central and highland South America, with particular emphasis on economic strategies, social organization, world view, and adaptation to change.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of anthropology.

400-4 Topics in Archaeology
Advanced study of various specialized aspects of archaeology.

410-4 Special Topics in Cultural Anthropology
Selected topics concerning the method and theory of anthropological thought and their relationship to the allied disciplines of economics, linguistics, art, politics, and history. Special emphasis placed on current trends influencing research in cultural anthropology. Topics vary from quarter to quarter.

446-4 Peoples and Cultures of South Asia
Survey and analysis of cultural diversity and unity in Southern Asia, particularly India, Pakistan, Bangladesh, and Sri Lanka.

447-4 Peoples and Cultures of Africa
Survey of the peoples and sociocultural systems of Africa with special emphasis on sub-Saharan ecological and biocultural relationships.

448-4 Development of Ethnological Thought
Surveys historical development of ethnological thought; emphasizes theories of social and cultural change. Senior standing and permission of instructor required.

450-4 Political Institutions in Primitive Societies
(Listed jointly with Department of Political Science and Urban Affairs; see PLS 450.) Study of that part of the culture of primitive societies which we recognize as political organization. An attempt is made to show how in less complex (primitive) societies new local communities come into being through fission.

468-4 Seminar in Archaeological Theory
Wide-ranging survey of traditional and contemporary archaeological theory, with study of its applications in various parts of the world. Prerequisite: ATH 142.
150 Courses/Anthropology

492-2 to 4 Independent Research in Anthropology
May be taken for letter grade or pass/unsatisfactory. Departmental approval required.

Art and Art History/ART
All courses in the Department of Art and Art History are offered with a pass/unsatisfactory grade option.

206-4 Fundamentals of Drawing
Introduction to materials, techniques, and concepts of drawing.

207-4 Introduction to Photography
Exploration of basic processes and concepts in still photography. Work involves learning basic skills and techniques. Assignments are designed to develop an understanding of light as an expressive element.

208-4 Fundamentals of Sculpture
Introduction to basic processes, materials, and concepts of sculpture.

209-4 Introduction to Color
Introduction to the study of the elements and interaction of color.

211-4 Art History I
Painting and sculpture before A.D. 1150. Introduction to the basic concepts of visual and stylistic analysis and an historical survey of painting and sculpture in the Western world from prehistoric to medieval times.

212-4 Art History II
Painting and sculpture from 1150 to 1850. Historical survey of painting and sculpture in the Western world from late medieval times to the dawn of the modern era. Prerequisite: ART 211 or permission of instructor.

213-4 Art History III
Painting and sculpture since 1850. Historical survey of modern painting and sculpture in the Western world. Prerequisite: ART 212 or permission of instructor.

219-4 Studies in the History of Architecture
Development of architecture in terms of formal qualities, materials, techniques, and function from ancient to modern times.

228-4, 229-4 Beginning Drawing
Introduction to concepts and techniques of drawing. May include studies from the human figure and other natural forms. Topics vary from quarter to quarter. Must be taken in sequence or permission of instructor required. Prerequisite: ART 206.

237-4, 238-4, 239-4 Beginning Film Video
Introduction to visual and aesthetic techniques and concepts, emphasizing development of individual artistic expression in various media such as film and video tape. Must be taken in sequence or permission of departmental adviser required. Prerequisite: ART 207 (or equivalent technical experience) or permission of instructor.

247-4, 248-4, 249-4 Beginning Painting
Working from still life and figure, emphasizing the use of color and drawing in visual organization. Must be taken in sequence or permission of departmental adviser required. Prerequisite: ART 206, 209; or permission of instructor.

258-4 Beginning Black and White Photography
Development of personal concepts and aesthetic expression in photography. Emphasis on individualized approach to photographic problems that arise from the students' work. Prerequisite: ART 207 or permission of instructor.

259-4 Beginning Color Photography
Development of personal concepts and aesthetic expression in photography. Emphasis on individualized approach to photographic problems that arise from the students' work. Topics vary from quarter to quarter. Prerequisite: ART 207, 268; or permission of instructor.

267-4 Beginning Printmaking—Intaglio
Exploration of printmaking, stressing intaglio methods: etching, engraving, drypoint, aquatint, and liftgrounds. Use of black-and-white techniques and introduction to color printing. Topics vary from quarter to quarter. Prerequisite: ART 206 (may be taken concurrently), or permission of instructor.

268-4 Beginning Printmaking—Lithography
Introduction to basic lithographic techniques using stone and/or metal plate. Emphasis on black-and-white printing and on aesthetic possibilities of the media. Topics vary from quarter to quarter. Prerequisite: ART 206, 228 (ART 228 may be taken concurrently); or permission of instructor.

269-4 Beginning Printmaking—Screenprinting
Introduction to silkscreening techniques such as stencil cut, photo stencil, and crayon and touche resists. Exploration of aesthetic possibilities of the media. Topics vary from quarter to quarter. Prerequisite: ART 207, 209 (ART 209 may be taken concurrently); or permission of instructor.

274-4, 279-4 Beginning Sculpture
Introduction to fundamentals of sculpture, emphasizing basic processes and materials. Must be taken in sequence or permission of instructor required. Prerequisite: for 278, ART 208.

287-4 Beginning Visual Communication
Introduction and orientation to the visual communication disciplines (graphic design, art direction, illustration), historically and currently. Prerequisite: ART 206 (may be taken concurrently) or permission of instructor.
288-4 Beginning Visual Communication
Development of drawing skills utilizing tools, materials, and processes of the professional designer. Prerequisite: ART 206, 287; or permission of instructor.

289-4 Beginning Visual Communication
Development of production skills and techniques for the preparation of material for reproduction. Prerequisite: ART 288 or permission of instructor.

297-4, 298-4, 299-4 Museology and Gallery Management
Examination of the history, purposes, and literature of museums and galleries. Various aspects of gallery management such as planning, organizing, and installing exhibitions. Prerequisite: ART 213 or permission of instructor.

300-1 to 4 Studio Workshop
A studio experience involving the student directly with a professional artist executing a special project. Covers a range of information from preliminary planning to final discussion on the project.

301-1 to 4, 302-1 to 4, 303-1 to 4 Independent Study in Art
Special studies for qualified students of junior or senior standing. Intensive individual work with faculty supervision in art. May be repeated. Approval of adviser, department chair, and college dean required.

309-4 Studies in Art Theory and Philosophy
Courses offered under this number provide both historical surveys and intensive studies in art theory and philosophy. May be repeated with different titles. Prerequisite: ART 213 or permission of instructor.

327-4, 328-4, 329-4 Intermediate Drawing
Development of personal concepts and aesthetic expression in drawing. Emphasis on individualized approach to drawing problems that arise from the students' work. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 229 or permission of departmental adviser.

337-4, 338-4, 339-4 Intermediate Film/Video
Study of visual and aesthetic techniques and concepts, emphasizing development of the individual artistic expression in various film and video tape media. May be repeated for credit. Prerequisite: ART 239 or permission of departmental adviser.

347-4, 348-4, 349-4 Intermediate Painting
Emphasis on principles of pictorial organization. Attention to the relationship of subject matter and abstraction as related to contemporary and traditional approaches. May be repeated for credit. Prerequisite: ART 228, 249 or permission of instructor.

357-4, 358-4, 359-4 Intermediate Black and White Photography
Development of personal concepts and aesthetic expression in photography. Emphasis on individualized approach to photographic problems that arise from the students' work. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 259 or permission of instructor.

367-4 Intermediate Printmaking—Intaglio
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 267 or permission of instructor.

368-4 Intermediate Printmaking—Lithography
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 268 or permission of instructor.

369-4 Intermediate Printmaking—Screenprinting
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 269 or permission of instructor.

Development of personal concepts and aesthetic expression in sculpture. Emphasis on individualized approach to sculptural problems using media selected by the students. May be repeated for credit. Prerequisite: ART 279 or permission of instructor.

387-4 Intermediate Visual Communication
Introduction to design elements and principles used in visual organization of material. Prerequisite: ART 209, 269, 289; or permission of instructor.

388-4 Intermediate Visual Communication
Development of understanding and use of typography, typesetting procedures, and techniques. Prerequisite: ART 387 or permission of instructor.

389-4 Intermediate Visual Communication
Creation of images utilizing cultural forms in the solution of visual communication problems using drawing, photography, and graphic techniques. Prerequisite: ART 207, 388; or permission of instructor.

400-2 Junior Seminar
Group discussions of contemporary writings in art and critiques of junior work in a peer setting with faculty and visiting artists participating on an informal basis.
152 Courses/Art and Art History

401-1 to 4, 402-1 to 4, 403-1 to 4 Independent Study in Art History
Special studies for qualified students of junior or senior standing. Intensive individual work with faculty supervision in art history. May be repeated. Approval of adviser, department chair, and college dean required.

404-1 to 4 Studies in Art History
Provides opportunities to explore problems and approaches to art and art history and includes cross-period and interdisciplinary studies. May be repeated with different titles. Prerequisite: ART 213 or permission of instructor.

405-1 to 4 Studies in Art
Provides opportunities to explore problems and approaches to art history and includes cross-media and interdisciplinary studies. May be repeated with different titles.

406-4 Senior Paper in Art History
Independent, advanced research project in student’s main area of interest, developed in consultation with art history faculty. For art history majors only. Completion of two 400-level courses in art history required.

409-4 Art Theory and Criticism
Historical surveys and intensive studies of art theory and criticism. May be repeated with different titles. Prerequisite: ART 213 or permission of instructor.

410-4 Studies in American Art
General surveys and intensive studies of periods, major movements, and artists of the time. May be repeated with different titles. Prerequisite: ART 213 or permission of instructor.

411-4 Studies in Ancient and Classical Art
(Listed jointly with Department of Classics; see CLS 340.) General surveys and intensive studies of the period, major movements, and artists of the time. May be repeated with different titles.

412-4 Studies in Medieval Art
General surveys and intensive studies of the period, major movements, and artists of the time. May be repeated with different titles. Prerequisite: ART 211 or permission of instructor.

413-4 Studies in Renaissance Art
General surveys and intensive studies of the period, major movements, and artists of the time. May be repeated with different titles. Prerequisite: ART 212 or permission of instructor.

414-4 Studies in Baroque Art
General surveys and intensive studies of the period, major movements, and artists of the time. May be repeated with different titles. Prerequisite: ART 212 or permission of instructor.

415-4 Studies in Nineteenth Century Art
General surveys and intensive studies of the period, major movements, and artists of the time. May be repeated with different titles. Prerequisite: ART 213 or permission of instructor.

416-4 Studies in Twentieth-Century Art
General surveys and intensive studies of the period, major movements, and artists of the time. May be repeated with different titles. Prerequisite: ART 213 or permission of instructor.

417-4 Studies in Non-Western Art
General surveys and intensive studies of periods, major movements, and artists in non-Western art. May be repeated with different titles. Prerequisite: ART 211 or permission of instructor.

427-4, 428-4, 429-4 Advanced Drawing
Exploration of the structure and interrelationships of visual form in drawing, painting, and sculpture. Principal historical modes of drawing examined. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 329 or permission of instructor.

437-4, 438-4, 439-4 Advanced Film/Video
Development of personal concepts and aesthetic expression in media. Emphasis on individualized approach to media problems using film and video tape. May be repeated for credit. Prerequisite: ART 339 or permission of instructor.

447-4, 448-4, 449-4 Advanced Painting
Continued emphasis on pictorial organization with increased attention to the student’s personal imagery. May be repeated for credit. Prerequisite: ART 349 or permission of instructor.

457-4, 458-4 Advanced Black and White Photography
Development of personal concepts and aesthetic expression in photography. Emphasis on individualized approach to problems that arise from the students’ work. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 359 or permission of instructor.

459-4 Advanced Color Photography
Development of personal concepts and aesthetic expression in photography. Emphasis on individualized approach to problems that arise from the students’ work. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 359 or permission of instructor.
467-4  Advanced Printmaking—Intaglio
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 367 or permission of instructor.

468-4  Advanced Printmaking—Lithography
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 368 or permission of instructor.

469-4  Advanced Printmaking—Screenprinting
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary from quarter to quarter. May be repeated for credit. Prerequisite: ART 369 or permission of instructor.

477-4, 478-4, 479-4  Advanced Sculpture
Further development of personal concepts and aesthetic expression in sculpture. Emphasis on individualized approach to sculptural problems using media selected by the students. May be repeated for credit. Prerequisite: ART 379 or permission of instructor.

487-4  Advanced Visual Communication
Advanced problems in visual communication involving application of design principles and problem-solving techniques to single-surface media: posters, ads, book covers. Prerequisite: ART 389 or permission of instructor.

488-4  Advanced Visual Communication
Advanced problems in visual communication involving application of design principles and problem-solving techniques to multiple-surface media: books, magazines, displays: film, video. Prerequisite: ART 237, 487, or permission of departmental adviser.

489-4  Advanced Visual Communication
Advanced problems in visual communication involving application of design principles and problem-solving techniques to systems of visual communication. Prerequisite: ART 488 or permission of instructor.

497-4  Advanced Museology and Gallery Management
Supervised independent field experience and practical work in all areas of art museum management in the university and greater Dayton area communities. Each student to be handled as a tutorial intern. May be repeated. Prerequisite: ART 299.

Art Education/AED

214-4  Foundations of Art Education
Introductory course in art education involving ideas and approaches to educating for aesthetic awareness, providing opportunities for the student's aesthetic development through experiences with conventional and unconventional art media, and offering an introduction to theories of art.

223-3  Crafts for Teachers
Creative problems in paper, wood, clay, fibers, and metal for the elementary grades. Participation and observation expected during course. Enrollment limited to elementary education majors. Prerequisite: AED 231 or permission of instructor.

224-2  Ceramics I
Rudiments of ceramic design, methods of forming, wheel throwing, firing, glazing, and decoration. Emphasizes ceramic techniques and procedures applicable to public school art program. An introductory studio design course or permission of instructor required.

225-4  Ceramics II
Advanced ceramic design, forming, wheel throwing, glaze calculations, decoration, and a high degree of experimental involvement. Emphasizes advanced ceramic techniques and procedures applicable to public school art program. Prerequisite: AED 224 or permission of instructor.

226-3  Modeling
Introductory work in construction of three-dimensional forms: sculptural potentials of clay and other plastic materials. Emphasizes modeling techniques for public school art program.

231-3  The Individual and the Creative Process
Emphasizes the elementary teacher's awareness of self as an individual responding to the environment and the recognition of the role of art in our culture. Includes methods and disciplines of creating with materials and tools, drawing and painting appropriate to public school classroom. For elementary education majors.

324-4  Enameling I
Introduction to basic methods and processes of application and fusing of ground glass to metals. Emphasizes enameling techniques and procedures for public school art program. Prerequisite: AED 214 or permission of instructor.

325-4  Enameling II
Advanced study of special methods and techniques of application and fusing of ground glass to metals. Emphasizes advanced enameling techniques and procedures for public school art program. Prerequisite: AED 324 or permission of instructor.
154 Courses/Art Education

370-1 to 3 Independent Study
Planned readings, project, participation/observation clinic experiences, or other appropriate study on an independent basis. May be repeated to a maximum of nine credit hours. Junior or senior standing and permission of instructor required.

411-4 Design: Process and Material
Advanced course in two- and three-dimensional design problems involving a wide range of techniques and materials related to teaching. Personal involvement in experimental approaches related to course problems. Completion of eight credit hours in advanced art education required. Prerequisite: AED 214 or equivalent.

423-4, 424-4, 425-4 Fibers and Fabrics
423: Introduction to fibers and fabrics as art forms. Basic techniques in various materials such as weaving, wrapping, twining, rya, batik, and other approaches appropriate to any school art program. 424: Use of loom and other hand techniques in weaving. Experimental approaches in completion of original ideas. Emphasizes techniques for public school art program. 425: Methods of silkscreen as it may be used in public school program. Analysis of textile design in contemporary living. Prerequisite: AED 214 or permission of instructor.

426-4 Creative Stitchery
Various methods and procedures of working with stitchery and appliqued forms: work with flat and stitched fabrics for wall hangings and other fabric art forms. Emphasizes stitchery and fabric techniques for public school art program. Prerequisite: AED 214 or permission of instructor.

428-4 Pupil Expression Through Mural Painting
Development of individual creative expression through mural painting; application of mural technique to the public school program. Completion of sixteen credit hours of art education, four of which must be advanced, required.

429-1 to 6 Workshop in Art Education
Problems, processes, and techniques for development of art activities in elementary and secondary schools. Development of craft processes concerned with suitable projects for classroom work and public art education curricula. Offered spring and/or summer sessions only.

430-3 Independent Reading in Art Education
Expands students' knowledge of philosophy, aesthetics, creative and mental growth as related to art teaching and art education curricula. Emphasis on current books, magazines, and research in art education. Junior, senior, or graduate standing required.

431-3 Art and the Child
Understanding child growth and development through creative expression, with emphasis on functions and procedures for art in the classroom. Includes curriculum implementation strategies. Experiences in art media appropriate to the elementary school and in-field observations of art in the schools. Prerequisite: AED 214 or 231; ED 211 through 217 or equivalent.

432-3 Art and the Adolescent
Develops an understanding of individual differences, psychological sets, and various roles of the adolescent as related to art and creativity. Curriculum planning, comparative theories, in-field observations, and analysis of art class content included. Prerequisite: AED 431 or permission of instructor.

436-1 to 4, 437-1 to 4 Minor Problems in Art Education
Survey of visual and performing arts. Visits to museums, galleries, and commercial sources of contemporary design and architecture. Written and/or visual evaluation of places visited required. One year of college or equivalent required.

438-4 Art Methods for Schools
Develops an understanding of the needs of children involved in art activities; study of elementary and secondary teaching techniques, materials, and curriculum organization. In-field work prior to student teaching. Reading components and teaching strategies included. Must be taken prior to student teaching. Prerequisite: AED 431, 432; ED 211 through 217; or equivalent. Corequisite: ED 327

440-1 to 3 Workshop/Field Trip in Art Education
Survey of visual and performing arts. Visits to museums, galleries, and commercial sources of contemporary design and architecture. Written and/or visual evaluation of places visited required. One year of college or equivalent required.

441-4 Art Appreciation and Criticism in the Schools
Understanding influences and interaction of the creative arts in our present culture. Emphasis on importance of developing appreciation in the public school. Study of processes inherent in aesthetic criticism and their relationship to teaching in the arts. Completion of sixteen credit hours of art education, eight of which must be advanced, required.
442-4 Advanced Problems in Art Education
Concentrated and advanced work with specific art media such as ceramics, metals, and fabrics. Emphasis on creative work and methods of teaching advanced procedures applicable to the public school art room. Previous work in area of studio concentration required.

443-4 Architectural and Environmental Awareness
Combination seminar and studio focusing on curriculum development for the public school in architectural space and environmental awareness. Emphasis on human behavior and resources, ecology and human needs, aesthetics and history.

Art Therapy/AT
370-1 to 3 Independent Study in Art Therapy
Planned readings, project, participation/observation, clinic experiences, or other appropriate study on an independent basis. Work is supervised by an art therapy faculty member. May be repeated to a maximum of nine credit hours. Junior or senior standing and permission of instructor required.

420-3 Media in Art Therapy
Experience with a variety of media appropriate to the clinical setting. Appropriate art media for remediation, adaptation, and expression included with discussion of application procedures. Permission of instructor required.

429-1 to 6 Workshop in Art Therapy
A workshop focusing on problems, processes, and techniques for the development of art therapy in special settings with diverse populations. Work in art media, assessment strategies, and treatment plans included. Discussion of implementation procedures with populations.

444-3 Art and the Special Student
Experiences to help those who will work with handicapped/disabled students to become aware of creative philosophy, art media, and therapeutic procedures. Approaches in creative activity included. Junior or senior standing required. Prerequisite: AED 431 or equivalent; or permission of instructor.

Aviation/AVI
101-4 Private Ground Instruction
Forty hours of ground instruction covering radio navigation, meteorology, FAA regulations, communications, aircraft construction, and performance data to meet requirements of private pilot's written examination.

102-4 Flight Instruction
Thirty-five hours of flight training and related lectures, including primary flight maneuvers and cross-country flying. Meets requirements for private pilot's certificate. Laboratory fee required. Students required to have passed FAA written examination.

Biology

Biology

Biological Chemistry/BCH
150-3 Introduction to Nutrition
A study of the nutrients, their functions, and factors determining nutrient availability. Designed for nonscience majors. Prerequisite: BIO 111, 112, or 113, or equivalent.

210-4 Introductory Biochemistry
Introduction to general principles of biochemistry especially for students interested in the health sciences. Topics include the chemistry of biological molecules, cellular metabolism, and mode of action of selected chemicals at the biochemical level. Prerequisite: CHM 102 or 141.

240-3 Drugs and Society
An overview, for either science or nonscience majors, of drugs that primarily affect mood, behavior, and perception and are subject to abuse. Drugs are discussed in their cultural, historical, and pharmacological perspectives. Prerequisite: BIO 113 or permission of instructor.

250-4 Human Nutrition
Nutrition as an integrated science emphasizing biochemical and physiological principles. General topics include nutritional energetics, specific nutrients, and nutrition and physiology. Discussion of basic concepts to clinical situations and to nutritional management of specific disease conditions. Prerequisite: BIO 112, 113 or 114, or equivalent; or permission of instructor.

340-4 Pharmacology
Introduction to general principles of pharmacology, drug classification, and the sites and mode of action of selected drug agents. Prerequisite: CHM 102; PHS 218, 219.

401-1 to 4 Topics in Biological Chemistry
Senior standing and departmental approval required.

421-4.5 Biochemistry I
Chemistry of biological compounds and introduction to enzymes. Organic chemistry or permission of instructor required.

422-3 Laboratory for Biochemistry I
Quantitative techniques in biochemistry, and chemical and instrumental methodology. Corequisite: BCH 421 (may be taken separately with permission of instructor).
Courses/Biological Chemistry

423-4.5 Biochemistry II
Intermediary metabolism of carbohydrates, proteins, nucleic acids, and lipids. Prerequisite: BCH 421.

424-3 Laboratory for Biochemistry II
Properties of enzymes, enzyme catalyzed reactions, and application of isotopes to the study of metabolism. Corequisite: BCH 423 (may be taken separately with permission of instructor).

427-4.5 Biochemistry III
Metabolism of hormones and amino acids, integration of metabolism, and aspects of human biochemistry including some metabolic disorders and nutrition. Prerequisite: BCH 423 or permission of instructor.

431-4.5 Clinical Biochemistry
Application of biochemical knowledge to a thorough understanding of disease states. Builds on material presented in BCH 421 and 423. Permission of instructor required (Previously listed as BCH 425.)

432-3 Plant Biochemistry
(Listed jointly with Department of Biological Sciences: see BIO 432.) Detailed study of biochemistry of photosynthesis, respiration, and other metabolic and biosynthetic processes in plants. Prerequisite: BCH 421, 423.

433-2 Laboratory for Plant Biochemistry
(Listed jointly with Department of Biological Sciences: see BIO 433.) Experiments follow the subject matter sequence of BCH 432. Corequisite: BCH 432 or permission of instructor.

451-3 Recent Developments in Biochemistry
Detailed consideration of major research developments in biochemistry within the past several months. Discussion deals not only with the appropriate research papers, but also with the background information left out of such articles. Prerequisite: BCH 421, 423; or permission of instructor.

488-1 Independent Reading
Junior standing and departmental approval required.

499-1 to 4 Special Problems in Biological Chemistry
Senior standing and minimum 2.2 cumulative grade point average required.

Biological Sciences/BIO

101-4 Cells, Genes, and Genetics
Study of cells and genetics provides the focus for examination of the unique interactions of matter, energy, and information which produce life and provide for its continuity and change. 3 hours lecture, 2 hours lab. Credit will not be granted to students with credit for BIO 112.

102-4 Evolution and Ecology
Examination of the interactions between organisms and their environments that determine the abundance, forms, and adaptations of species in space and time. 3 hours lecture, 2 hours lab. Credit will not be granted to students with credit for BIO 111. Prerequisite: BIO 101.

103-4 Human Biology
Development of a conceptual understanding of the organization and function of the human body throughout the cycle of life. 3 hours lecture, 2 hours lab. Credit will not be granted to students with credit for BIO 113. Prerequisite: BIO 102.

111-4 Principles of Biology: Ecology
Introduction to basic concepts of biology. Topics include environment, ecology, and the diversity of life. Credit will not be granted to students with credit for BIO 102.

112-4 Principles of Biology: Genetics and Evolution
Introduction to basic concepts of biology. Topics include genetics, evolution, and the molecular and cellular basis for the unity of life. Credit will not be granted to students with credit for BIO 101. Prerequisite: for majors, BIO 111, CHM 101 or 121; for nonmajors, BIO 111.

113-4 The Human as an Organism
Introduction to biology at the organismic and systematic levels with emphasis on man. Topics reflect contemporary interests and usually include man as an evolved species, nutrition, disease, and reproduction. Credit will not be granted to students with credit for BIO 103. Prerequisite: BIO 111, 112.

114-4 Organismic Biology
Introduction to the structure and function of plants and animals. Prerequisite: BIO 111, 112.

119-1 Honors Recitation, Principles of Biology (111, 112, 114)
Recitation/discussion section to review basic concepts developed in the laboratory. Coregistration in lecture and honors laboratory required.

199-1 Introduction to Biological Investigation
For individually motivated students at the introductory level who wish to pursue some particular project under faculty supervision. Graded pass/unsatisfactory. May be repeated not more than three times, in three separate quarters. Permission of supervising instructor required.
**Departmental Unit Courses**

**202-5 Microbiology**
Study of morphology, cultivation, and biochemical activities of microorganisms. Survey of viruses, bacteria, blue-green algae, and fungi and their diversity in natural environments. 3 hours lecture, 4 hours lab. Prerequisite: BIO 111, 112, CHM 141.

**203-5 Biology of Lower Plants**
Study of morphology, taxonomy, and ecology of algae, fungi, and bryophytes. Special emphasis given to growth and developmental patterns, modes of reproduction, importance to man and to ecosystems, diversity, distribution, and phylogenetic relationships. 2 hours lecture, 6 hours lab. Prerequisite: BIO 111, 112.

**204-5 Biology of Vascular Plants**
Study of form, development, reproduction, and life histories of vascular plants. Survey of representative plant families emphasizing phylogenetic relationships, distribution, and vegetational types in natural habitats. 2 hours lecture, 6 hours lab. Prerequisite: BIO 111, 112.

**205-5 Biology of the Invertebrates**
Morphology, development, physiology, and evolutionary relationships of major invertebrate groups. 3 hours lecture, 6 hours lab. Prerequisite: BIO 111, 112.

**206-5 Vertebrate Biology**
Introduction to vertebrate animals, including adaptive morphology, comparative embryology, and evolutionary history. 2 hours lecture, 6 hours lab. Prerequisite: BIO 111, 112.

**302-3 Genetics**
The nature and function of genetic material and its role in quantitative, physiological, and population genetics of plants, animals, and man. Prerequisite: BIO 111, 112; MTH 130; or permission of instructor.

**303-5 Vertebrate Histology**
Study of structure/function relationships in vertebrate tissues, organs, and organ systems. 3 hours lecture, 4 hours lab. Prerequisite: at least one 200-level or above biology course, CHM 211; or permission of instructor.

**304-5 Plant Physiology**
Special aspects of plant physiology which set plants apart from other organisms. Laboratory introduces independent research concerning plant nutrition and bud development. 3 hours lecture, 4 hours lab. Prerequisite: BIO 203 or 204; CHM 141.

**305-5 Animal Physiology**
Basic adaptive mechanisms and their coordination in the activities of the metazoa. 3 hours lecture, 4 hours lab. Prerequisite: BIO 111, 112; BIO 205 or 206; CHM 141.

**306-5 Ecology**
Introduction to ecology, emphasis on the organism's interaction with the environment. 3 hours lecture, 4 hours lab. Prerequisite: for majors, completion of Area B requirement; for nonmajors, BIO 111, 112; junior or senior standing; permission of instructor.

**307-6 Cell Biology**
Elements of cell structure are studied with emphasis on functional correlations. Laboratory experiments demonstrate principles of isolation, fractionation, and purification of organelles; biochemical and physiological properties of cells and cell constituents, and metabolic interrelationships. 3 hours lecture, 6 hours lab. Prerequisite: BIO 111, 112; CHM 211, 212; PHY 111.

**312-2 Genetics Laboratory**
Accompanying laboratory for BIO 302. Experiments and techniques in genetic research. Prerequisite: BIO 111, 112; MTH 130; or permission of instructor. Corequisite: BIO 302.

**402-3 Molecular Biology**
The molecular basis of the living state with emphasis on macromolecular structure and function and the molecular mechanisms for the transmission and expression of genetic information. Recommended preparation: BIO 202, 302. Prerequisite: CHM 213.

**403-5 Developmental Biology**
Describes underlying processes that initiate in plants and animals, the development of tissues and the whole organism. Laboratory exercises designed to highlight developmental processes. 3 hours lecture, 4 hours lab. Recommended preparation: BIO 303, 402. Prerequisite: BIO 111, 112; CHM 141.

**405-3 Molecular Biology Laboratory**

**492-1 to 2 Senior Seminar**
Literature survey, discussion, and oral presentations of selected topics in the biological sciences. Course requires written presentations when offered for two credit hours and one recitation. Senior standing required.

**Additional Courses**

**201-1 to 3 Topics in Biology**
Selected biological topics of current interest. May be repeated. Sophomore standing required.

**292-1 Introduction to Environmental Health**
Introduction to the role of the environmental health profession in meeting current problems in public health and environmental quality.
Courses/Biological Sciences

301-5 **Physiology and Health**
Basic structure and function of the human; consideration of health, disease, and abnormalities. 3 hours lecture, 2 hours lab, 1 hour recitation. Cannot be applied to Area F requirement for biology majors. Prerequisite: BIO 111, 112, 114; or permission of instructor.

315-3 **Introduction to the History of Biology**
Overview of the antecedents of modern biological thought. Sophomore standing required.

350-3 **Biology of Economic Plants**
Study of economically important algae, fungi, lichens, bryophytes, and vascular plants as related to man. Emphasis given to plants that are food sources, involved in industrial processes, and which affect man's overall cultural and social development. Prerequisite: BIO 114 or permission of instructor.

351-1 **Biology of Economic Plants Laboratory**
Provides opportunity for direct observation of plants as an economic commodity and emphasizes the survey approach to economically important plant groups. Corequisite: BIO 350.

360-3 **Principles of Environmental Health I**
Relationship of physical and biotic environment to design and operation of systems and procedures employed in maintenance and promotion of a quality, healthful human environment. Emphasis on water quality control and waste disposal methods. For environmental health majors. Prerequisite: BIO 202, CHM 141.

361-3 **Environmental Health Field and Laboratory Practice I**
Field and laboratory technology utilized in monitoring the environment and evaluating effectiveness of environmental control operations. Emphasis on water quality control and waste disposal methods. For environmental health majors. Corequisite: BIO 360.

362-3 **Principles of Environmental Health II**
Relationship of physical and biotic environment to design and operation of systems and procedures employed in maintenance and promotion of a quality, healthful human environment. Emphasis on food sanitation, solid waste, institutional sanitation. Prerequisite: BIO 202, CHM 141.

363-3 **Environmental Health Field and Laboratory Practice II**
Field and laboratory technology utilized in monitoring the environment and evaluating effectiveness of environmental control operations. Emphasis on food sanitation, solid waste, and institutional sanitation. Corequisite: BIO 362.

364-3 **Principles of Environmental Health III**
Theory, design, and operation of systems, facilities, and procedures employed in maintenance and promotion of a quality, healthful environment, with emphasis on housing and recreation sanitation. Prerequisite: BIO 301; STT 265; or permission of instructor.

365-3 **Environmental Health Field and Laboratory Practice III**
Field and laboratory technology utilized in monitoring the environment and evaluating effectiveness of environmental control operations. Emphasis on housing and recreation sanitation. Corequisite: BIO 364.

366-9 **Environmental Health Field Internship**
One-quarter internship in a cooperating environmental or public health agency or industrial organization. Supervised by faculty and professional environmentalists. Reports and specific assignments determined in cooperation with internship director. Graded pass/unsatisfactory. Enrollment limited to environmental health majors. Approval of internship director required. Prerequisite: BIO 360 through 365.

375-3 **The Biology of Human Sex**
Human reproductive physiology, including family planning, fertility, and introduction to human development. Introduction to physiologic, genetic, and anatomic sexual dysfunction. One year of introductory biology and junior standing, or permission of instructor required.

401-1 to 3 **Topics in Modern Biology**
Advanced topics in modern biology of current interest. Topics vary from quarter to quarter. May be repeated. Senior standing required.

404-5 **Basic Electron Microscopy**
Basic theory and practical experience in transmission electron microscopic technology. Animal, plant, and particulate specimens are processed in the laboratory. Completion of chemistry requirement, junior or senior standing, and permission of instructor required. Prerequisite: BIO 303 or 307.

411-6 **The Aquatic Environment**
Introduction to limnology. Field and laboratory course concerned with physical, chemical, and biological factors that characterize natural waters. 3 hours lecture, 6 hours lab, field trips. Recommended preparation: BIO 306 or equivalent or permission of instructor.

412-6 **Aquatic Communities**
Analysis of the functional relationships of organisms with the aquatic environment; special emphasis on species interactions. 3 hours lecture, 6 hours lab, field trips. Recommended preparation: BIO 306 or equivalent.
413-5 Biological Problems of Water Pollution
Introduction to biological aspects of water pollution. Lectures, discussions, laboratories, and field trips on various types of pollutants and their impact on aquatic life. 3 hours lecture, 4 hours lab. Required field trips. Recommended preparation: BIO 411 or permission of instructor.

414-5 Terrestrial Communities
The organization, diversity, distribution, and abundance of animals in plant communities, with particular regard to terrestrial insect-plant relationships. Laboratories and field trips acquaint students with various techniques used for ecological studies of population and community dynamics in natural environments. Special travel fee may apply. Prerequisite: BIO 306 or equivalent and permission of instructor.

415-4 Environmental Toxicology
Covers toxicological problems encountered in the field of environmental health. Emphasis is on monitoring, control, and regulation of toxic substances in air and water and in industrial environments. Completion of a course in physiology and in organic chemistry required.

416-3 Principles of Ecotoxicology
The various types of ecotoxins and their impact on aquatic and terrestrial organisms. Emphasis is on types and sources of toxicants: their uptake, accumulation, excretion, and biological effect. Completion of a course in organic chemistry and in physiology required. Recommended preparation: BIO 411, 415.

417-4 Evolution
(Taught jointly with Department of Religion; see REL 417) Introduction to the biological, philosophical, theological, and ethical aspects of the concept of evolution. Junior or senior standing and permission of instructor required.

418-4 Methods in Environmental Toxicology
Study of methods used to study toxic effects of chemical and physical agents on living organisms. Emphasis is on those which affect populations and communities within natural ecosystems, but can be used to indicate potential toxicity for humans. Prerequisite: BIO 415/615 or 416/616; or PHA 751.

419-3 Modern Methods in the Molecular Biology of Nucleic Acids
Examines modern laboratory techniques used to investigate nucleic acids. Lectures outline principles of techniques plus actual laboratory experience using the techniques. Electrophoresis, spectrophotometry, use of restriction enzymes. Recommended preparation: BIO 403. Prerequisite: BIO 202; BIO 402 or BCH 421.

420-3 Designing Biological Experiments
Principles of effective sampling design for biological experiments. Reconciling the peculiarities of biological data with the assumptions of statistical methods. Lectures and problem sets. Completion of two 300-level or above biology courses and one course in statistics required.

425-5 Microbial Ecology

426-4 Human Genetics
Nature of human genetic traits, methods of analysis of inheritance. Prerequisite: BIO 302, 402.

428-3 Biology of Slime Molds
The biology of the slime molds includes primarily the protosteliales, acrasiales, and myxomycetes. For each group, the life cycle, the ultrastructure and gross morphology of developmental stages, and the natural relationships and taxonomy are discussed and demonstrated. The course is designed primarily for students or inservice teachers who may wish to use these organisms in future classroom teaching or research. Prerequisite: BIO 111, 112, 202, and junior standing or permission of instructor.

430-3 Radiation Biology
Introduction to the nature of ionizing radiation, its biological effects, and its applications to biological problems. Prerequisite: BIO 403, CHM 213, MTH 131, PHY 113 or permission of instructor.

432-3 Plant Biochemistry
(Taught jointly with Department of Biological Chemistry; see BCH 432) Detailed study of the biochemistry of photosynthesis, respiration, and other metabolic and biosynthetic processes in plants. Prerequisite: BCH 421, 423.

433-2 Laboratory for Plant Biochemistry
(Taught jointly with Department of Biological Chemistry; see BCH 433.) Experiments follow the subject matter sequence of BIO 432. Corequisite: BIO 432 or permission of instructor.

434-3 Introduction to Clinical Laboratory Science
Introduction to procedures and techniques related to clinical laboratory function. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.
435-2 **Advanced Clinical Laboratory Science**
(Listed jointly with Medical Technology; see MT 435.) Study of advanced methodology and instrumentation, which may include computer applications, data management, research data collection, and statistical analysis. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.

436-5 **Diagnostic Microbiology**
Application of microbiological principles to diagnosis, infection, and resistance. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.

437-5 **Methods of Diagnostic Microbiology**
Laboratory experiments in diagnostic microbiology. Enrollment limited to medical technology interns. Corequisite: BIO 436.

438-5 **Clinical Chemistry**
Application of principles of biochemistry to the human in health and disease. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.

439-5 **Clinical Laboratory: Biochemistry**
Laboratory course using current clinical chemistry techniques for the analysis of human tissues and fluids. Enrollment limited to medical technology interns. Corequisite: BIO 438.

440-4 **Body Fluid Analysis**
(Listed jointly with Medical Technology; see MT 440.) Study of body fluids covering the pathophysiology of their formation and nature as well as the techniques of examination for diagnostic information. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.

442-4 **Hematology**
Study of hematopoiesis, blood cell cytology, and clotting mechanisms of human blood. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.

443-4 **Hematology Laboratory**
Laboratory study of cellular elements of blood and hemostasis. Enrollment limited to medical technology interns. Corequisite: BIO 442.

444-3 **Immunohematology**
Immunology and genetics of human blood groups and types. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.

445-3 **Immunohematology Laboratory**
Study of immunology as applied to human blood isoantigens and isoantibodies. Enrollment limited to medical technology interns. Corequisite: BIO 444.

446-2 **Immunology**
Study of antigens and antibodies with emphasis on *in vivo* and *in vitro* reactions. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum required.

447-3 **Laboratory Immunology: Serology**
Study of detection and measurement of antigens or antibodies using *in vitro* systems. Enrollment limited to medical technology interns. Corequisite: BIO 446.

448-2 **Clinical Pathology Correlation**
Correlation of clinical laboratory findings with different human physiological states. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum and departmental approval required.

449-2 **Clinical Pathology Seminar**
Presentation and discussion of topics in clinical laboratory medicine. Enrollment limited to medical technology interns. Completion of preprofessional medical technology curriculum and departmental approval required.

450-1.5 **Pediatric Clinical Laboratory**
(Listed jointly with Medical Technology; see MT 450.) Study of basic analytical techniques applicable to the examination of pediatric body fluids and tissues. Enrollment limited to students in medical technology clinical year.

452-3 **Advanced Genetics**
Basic concepts of genetic control of form, function, and change in biological systems; emphasis on microbial, developmental, and biochemical genetics. Prerequisite: BIO 302, 402, or permission of instructor.

453-3 **Advanced Genetics Laboratory**
Illustrates some aspects of microbial, biochemical, and developmental genetics. Prerequisite or corequisite: BIO 452.

454-3 **Microbial Genetics**
Basic concepts of production of microbial mutations, their detection and analysis. Use of microbial genetics in elucidating cellular functions. The construction of plasmids and their use in genetic engineering. Prerequisite: BIO 202, 302; BIO 402 or BCH 421 or 423; or permission of instructor.

455-3 **Plant Systematics**
Survey of topics and techniques encountered in studies of relationships and evolution of the higher plants, emphasizing the flowering plants. Senior standing or permission of instructor required. Prerequisite: BIO 204.

456-3 **Microbial Genetics Laboratory**
Familiarizes students with microbial genetics techniques. Corequisite: BIO 454.
457-3 Microbial Physiology
Study of the physiological and biochemical processes associated with microbial growth, development, and metabolism. Prerequisite: BIO 202, 402 or permission of instructor.

458-3 Microbial Physiology Laboratory
Laboratory study of the physiology and biochemistry of microbial growth, development, and metabolism. Prerequisite: BIO 202. Corequisite: BIO 457.

461-2 Problems in Environmental Health
Seminar/workshop in professional aspects of environmental health. Enrollment limited to environmental health majors who have completed field internship. Prerequisite: BIO 366 or permission of instructor.

462-3 Environmental Aspects of Human Disease
Communicable and occupational diseases of contemporary importance; includes epidemiological investigation, environmental considerations, and control procedures. Prerequisite: BIO 360 through 365, or M&I 426; or permission of instructor.

463-3 Community Public Health Resources
Lecture/seminar course covering principles of public health organization and administration, public health law, comprehensive health planning, and the community services provided by health-related agencies. May be taken for letter grade or pass/unsatisfactory. For allied health students and personnel. Prerequisite: BIO 461 or permission of instructor.

464-3 Microbiology of Food
Principles of food microbiology, preservation, and handling. Major organisms of food poisoning and means of control are considered. Completion of a course in microbiology required.

465-3 Ecological Genetics
Concerned with the experimental study of evolution and adaptation that has been carried out by means of combined field work and laboratory genetics. Students are expected to have a basic knowledge of genetics and ecology. Prerequisite: BIO 302, 306.

466-3 Occupational Health and Safety
Introduction to accident recognition, evaluation, and control in the work environment. Emphasis on methods of hazard recognition and control management. Prerequisite: CHM 141, MTH 130.

467-2 Occupational Health and Safety Lab
Introduction to accident recognition, evaluation, and control in the work environment by hands-on equipment use. Methods of inspection, accident investigation, and evaluation of accident programs are stressed. Prerequisite: CHM 141, MTH 130.

468-3 Industrial Hygiene I
Introduction to industrial hygiene. Emphasis placed on routes of entry into the human body and physiological effects of industrial pollutants. Prerequisite: CHM 141, 211, 215; MTH 130.

469-2 Industrial Hygiene I Lab
Introduction to industrial hygiene. Methods of measuring toxic effects and providing adequate protection discussed and demonstrated. Prerequisite: CHM 141, 211, 215; MTH 130.

470-3 General Entomology
Basic study of morphology, physiology, habits and classification of insects. Some discussion of pesticide toxicology and insect management included. Junior standing or permission of instructor required.

471-2 General Entomology Laboratory
Introduction to insect morphology, physiology, identification, and toxicology. Student collection and field trips required. Corequisite: BIO 470.

473-5 Biology of Selected Marine Environments
Biological aspects of marine environments. Sampling and observation of living marine specimens during weeklong trip to marine laboratory. A special fee is applicable. Application during winter quarter and permission of instructor required. Recommended preparation: invertebrate zoology.

474-6 Ecological Physiology of Aquatic Animals
Physical and chemical adjustment, tolerance, and acclimation of organisms to the aquatic habitat. 3 hours lecture, 6 hours lab. Recommended preparation: BIO 305, 411; or equivalent.

476-2 Human Parasitology
Study of aspects of parasitology including biology, epidemiology, diagnosis, and identification of parasites. Divided into three major categories: protozoology, helminthology, and arthropodology. Junior standing or permission of instructor required.

477-3 Human Parasitology Laboratory
Examination and identification of protozoan, helminthic, and arthropod parasites of man. Junior standing or permission of instructor required. Corequisite: BIO 476.

478-4 Animal Behavior
(Listed jointly with Department of Psychology; see PSY 478.) Physiology, phylogeny, and ontogeny of behavior. 3 hours lecture, 2 hours lab, discussion. Recommended preparation: BIO 302 and one course in statistics. Prerequisite: BIO 111, 112, and 113 or 114; or BIO 101, 102, 103; or PSY 111, 112, 300.
480-5 Biology of Fishes
Introduction to the evolution, ecology, and distribution of freshwater and marine fishes. 3 hours lecture, 4 hours lab, field trips. A special fee is applicable. Junior standing required. Prerequisite: BIO 206, 306 or permission of instructor.

484-3 Introduction to Biogeography
(Listed jointly with Department of Geography; see GEO 484) Introduction to the factors affecting the distribution of plants and animals. Prerequisite: BIO 111, 112, 306 or permission of instructor.

486-3 Industrial Hygiene II
Evaluation of health effects of fumes, smoke, gases, dusts, and mists in the work place. Effects of radiation and noise considered. Prerequisite: BIO 468, 469; CHM 141, 211, 215; MTH 130.

487-2 Industrial Hygiene II Laboratory
Evaluation of health effects of fumes, smoke, gases, dusts, and mists in the work place. Methods of detection and control emphasized. Prerequisite: BIO 468, 469; CHM 141, 211, 215; MTH 130.

488-1 Independent Reading
Graded pass/unsatisfactory. A maximum of seven credit hours from either BIO 488 or 499 or both can be applied to Area F requirement for biology majors. Junior standing and departmental approval required.

495-1 to 5 Senior Honors Research
Acceptance into biology honors program required.

499-1 to 3 Special Problems in Biology
A maximum of seven credit hours from either BIO 488 or 499 or both can be applied to Area F requirement for biology majors. Minimum 2.2 cumulative grade point average and departmental approval required.

Chemistry/CHM

101-4.5 Introduction to Chemistry
Historical approach to the fundamentals of chemistry: composition and structure, properties and transformations of matter. 3 hours lecture, 3 hours lab. For students with no previous chemistry. May be followed by CHM 102 or 121.

102-4.5 Elementary Organic Chemistry with Applications
An elementary discussion of the structure of hydrocarbons, organic functional groups, and a few selected reactions. 3 hours lecture, 3 hours lab. Prerequisite: CHM 101 or 121.

103-4.5 Men and Molecules—The Chemical Enterprise
Topical study of ways in which chemical principles are applied in the modern world: impact of chemistry on society. 3 hours lecture, 3 hours lab. Prerequisite: CHM 102 or 121.

121-5 Submicroscopic Chemistry
Structure and properties of atoms and molecules and the macroscopic consequences thereof. 3 hours lecture, 3 hours lab, 1 hour recitation. Prerequisite: CHM 101, MTH 127; or equivalent.

122-5 Macroscopic Chemistry
Physical and chemical behavior of large collections of atoms and molecules. 3 hours lecture, 3 hours lab, 1 hour recitation. Prerequisite: CHM 121.

141-5 Quantitative Chemistry
Quantitative aspects of chemistry: emphasis on computational and experimental estimation of the composition of chemical systems. 3 hours lecture, 3 hours lab, 1 hour recitation. Prerequisite: CHM 122, MTH 127.

211-4 Organic Chemistry I
Principles, theories, and applications of the chemistry of carbon compounds. 3 hours lecture, 1 hour recitation. Prerequisite: CHM 141. Corequisite: CHM 215.

212-4 Organic Chemistry II
Principles, theories, and applications of the chemistry of carbon compounds. 3 hours lecture, 1 hour recitation. Prerequisite: CHM 211. Corequisite: CHM 216.

213-4 Organic Chemistry III
Principles, theories, and applications of the chemistry of carbon compounds. 3 hours lecture, 1 hour recitation. Prerequisite: CHM 212. Corequisite: CHM 217.

215-2 Organic Chemistry Laboratory I
Laboratory illustrations of CHM 211 lecture material and techniques of preparative organic chemistry. Prerequisite: CHM 141. Corequisite: CHM 211.

216-2 Organic Chemistry Laboratory II
Laboratory illustrations of CHM 212 lecture material and techniques of preparative organic chemistry. Prerequisite: CHM 215. Corequisite: CHM 212.

217-2 Organic Chemistry Laboratory III
Laboratory illustrations of CHM 213 lecture material and techniques of preparative organic chemistry. Prerequisite: CHM 216. Corequisite: CHM 213.

301-3 Philosophy of Chemistry
An upper-level course for non-science majors who wish to learn about chemistry from a philosophical and humanistic viewpoint. Junior or senior standing and permission of instructor required.
311-7.5 Qualitative Organic Analysis
Systematic classification and identification of organic compounds by chemical and instrumental methods. 3 hours lecture, 9 hours lab. Prerequisite: CHM 213, 217.

312-3 Quantitative Analysis
Introduction to chemical methods of analysis covering traditional as well as modern techniques and equipment; emphasis on calculations and the interpretation of analytical data. Prerequisite: CHM 213, 217.

313-3 Instrumental Analysis
Introduction to the theory and practice of modern chemical instrumentation. Elementary electronics, spectrophotometry, atomic absorption, electrochemical techniques, chromatography, and other instrumental techniques. Prerequisite: CHM 312, 452. Corequisite: CHM 314.

314-4.5 Quantitative Analysis Laboratory
Experimental methods of analysis. Practical applications of lecture material presented in CHM 312. Prerequisite: CHM 141. Corequisite: CHM 312.

315-4.5 Instrumental Analysis Laboratory
Introduction to experimental instrumental analysis. Practical experience in the operation of chemical instrumentation; emphasizes applications of material presented in CHM 313. Prerequisite: CHM 312, 452. Corequisite: CHM 313.

319-1 Chemical Literature
Introduction to chemical literature in journals, handbooks, abstracts, monographs, and patents. Literature searches required in a variety of chemical areas. Prerequisite: CHM 212, 451.

361-4 The Organic Chemistry of Engineering Materials
The molecular structure, stereochemistry, properties, and reactivities of selected organic substances of industrial importance, including fuels, lubricants, solvents, coatings, plastics, dyes, and naturally occurring engineering materials. Not open to students with credit for CHM 212. Prerequisite: CHM 212. Corequisite: CHM 122.

410-3.5 Environmental Chemistry I: Air
Study of earth's atmosphere, including its normal composition and atmospheric reactions; emphasis on nature, causes, effects, detection, and abatement of various types of air pollution. 2 hours lecture, 3 hours lab or field project. Prerequisite: CHM 213, 312; or corequisite CHM 414.

411-3.5 Environmental Chemistry II: Water
Study of earth's fresh and saline water, including its normal composition and aquatic reactions; emphasis on nature, causes, effects, detection, and abatement of various types of water pollution. 2 hours lecture, 3 hours lab or field project. Prerequisite: CHM 213, 312; or corequisite CHM 415.

412-3.5 Environmental Chemistry III: Solids
Survey of problems of solid wastes, pesticides, food additives, and radioactive materials, including their chemical composition, effects, detection, disposal, and natural breakdown. 3 hours lecture, 1 hour lab or field project. Prerequisite: CHM 213, 312; or corequisite CHM 416.

414-1 Directed Study in Prerequisite Material for Environmental Chemistry I
Survey of topics in organic and analytical chemistry for students in CHM 410 who do not have previous knowledge of organic or analytical chemistry. Structure and reactions of selected compounds and principles of some analytical techniques briefly covered the week prior to their inclusion in Environmental Chemistry I. Not open to students with credit for CHM 213 and 312, or equivalent. Prerequisite: CHM 122. Corequisite: CHM 410.

415-1 Directed Study in Prerequisite Material for Environmental Chemistry II
Survey of topics in organic and analytical chemistry for students in CHM 411 who do not have previous knowledge of organic or analytical chemistry. Structure and reactions of selected compounds and principles of some analytical techniques briefly covered the week prior to their inclusion in Environmental Chemistry II. Not open to students with credit for CHM 213 and 312, or equivalent. Prerequisite: CHM 122. Corequisite: CHM 411.

416-1 Directed Study in Prerequisite Material for Environmental Chemistry III
Survey of topics in organic and analytical chemistry for students in CHM 412 who do not have previous knowledge of organic or analytical chemistry. Structure and reactions of selected compounds and principles of some analytical techniques briefly covered the week prior to their inclusion in Environmental Chemistry III. Not open to students with credit for CHM 213 and 312, or equivalent. Prerequisite: CHM 122. Corequisite: CHM 412.

420-3, 421-3 Inorganic Chemistry
Principles and concepts of inorganic chemistry, including the periodic table, atomic structure, chemical bonding, coordination compounds, and an introduction to group theory. Must be taken in sequence. Prerequisite: CHM 453 or permission of instructor.
Courses/Chemistry

440-3, 441-3 Synthetic Medicinal Chemistry I, II
A two-quarter course concerned with various chemical aspects of drugs including synthetic design, mode of action, and uses of various pharmaceuticals. Topics include cardiovascular agents, antibiotics, anti-tumor agents, and central nervous system drugs. Prerequisite: CHM 213.

443-3, 444-3 Chemical Toxicology I, II
Study of the basic principles of chemical toxicology. Chemicals which have the greatest incidence of abuse are discussed in detail with regard to their chemical-biological interactions, symptomatology of toxicity, clinical chemistry tests, and treatment. Prerequisite: CHM 213, 312.

446-3, 447-3 Clinical Chemistry I, II
Study of the basic principles of the chemistry of blood and urine. Analytical procedures and clinical significance of various test procedures are discussed with regard to aiding diagnosis of disease states. Prerequisite: CHM 213, 312.

451-3, 452-3, 453-3 Physical Chemistry
Theoretical aspects of chemistry including thermodynamics, chemical kinetics, molecular structure and spectra, and the structure of solids and liquids. Must be taken in sequence. Prerequisite: CHM 141, MTH 231, PHY 242 or permission of instructor.

456-4 Physical Chemistry for Nonchemists
Introduction for nonchemistry majors to the ideas of physical chemistry, including thermodynamics, properties of liquids and solids, solution properties, and kinetics. Intended for biologists, geologists, physicists, premedical students, and others with an interest in physical chemistry. Not open to chemistry majors. One year each of college chemistry and physics, and one quarter of calculus required.

457-2 Physical Chemistry Laboratory I
Experimental methods of physical chemistry. Corequisite: CHM 452.

458-2 Physical Chemistry Laboratory II
Experimental methods of physical chemistry. Corequisite: CHM 453.

465-3 Introduction to Polymer Science I
Introduction to the structural and physical aspects of macromolecules; emphasis on the relationship of polymer structure to physical and mechanical properties. Prerequisite: CHM 213 or 361. Corequisite: CHM 467.

466-3 Introduction to Polymer Science II
Step-growth and chain-growth polymerization in homogeneous and heterogeneous media; properties of commercial polymers. Prerequisite: CHM 213 or 361. Corequisite: CHM 468.

467-1 to 2 Introduction to Polymer Science Laboratory I
Laboratory illustrations of CHM 465 lecture material and techniques of polymer science. Corequisite: CHM 465.

468-1 to 2 Introduction to Polymer Science Laboratory II
Laboratory illustrations of CHM 466 lecture material and techniques of polymer science. Corequisite: CHM 466.

469-4 Engineering Plastics: Materials, Processes, and Design
(Listed jointly with School of Engineering; see EGR 489.) Properties and manufacturing processes of engineering plastics and effects of these factors on plastics design. Illustrative laboratory projects are included. 2 hours lecture, 4 hours lab. Prerequisite: CHM 465.

479-4 Materials Corrosion
(Listed jointly with School of Engineering; see EGR 479.) Survey of principles of corrosion processes with application to metallic and nonmetallic materials. Principles of electrochemistry are included. Prerequisite: EGR 315, 370; or corequisite CHM 453; or permission of instructor.

488-1 to 3 Independent Reading
Departmental approval required.

499-1 to 5 Special Problems in Chemistry
Senior standing and departmental approval required.

Classics/CLS
Courses under this heading do not require knowledge of Greek or Latin.

100-4 Latin and Greek Roots in English
Builds English vocabulary through a study of Latin and Greek roots. Emphasis on words used commonly in higher education rather than on specialized terminology.

101-4 Medical and Scientific Terminology
Spelling, recognition, and understanding of that portion of contemporary specialized vocabulary which is based on the Latin and Greek languages. Emphasis on terminology of the medical sciences.

111-4 Introduction to the Classical Humanities
A survey of the development of classical culture from prehistoric Greece to the fall of the Roman Empire. A broad view of the interrelated political, economic, and social conditions, the philosophy, religion, mythology, literature, art, and architecture.

112-4 Classical Greek Literature and Culture
The Greek experience in fifth and fourth centuries B.C., with emphasis on Athenian democracy and the Golden Age of Athens: drama, history, oratory, and philosophy.
113-4 Latin Literature and Roman Culture
Emphasis on Late Republic and Early Empire, particularly the Augustan Age. The idealism of Virgil and Lucretius; the realism of Cicero, Sallust, and Tacitus.

211-4 Introduction to Classical Mythology
A survey of the myths and legends of ancient Greece and Rome which are an important part of the Western literary and cultural tradition. The emphasis is on story patterns and characters.

CLS 111 is strongly recommended, but not required, as a prerequisite for all advanced courses. CLS 112 and 113 provide additional useful background. The following courses offer a variety of topics; they may be repeated for credit by number, although not by content. Students should consult the department for the scheduled subjects.

300-4 How We Know about Antiquity
How do we know what we think we know about classical antiquity? Study of the different types of evidence and of ways in which this evidence is analyzed, handled, and interpreted by scholars.

310-4 Studies in Ancient Literature
Drama, epic, and lyric poetry, prose; selected themes in ancient literature; literary criticism. Junior standing or departmental approval required.

320-4 Studies in Ancient Mythology
Greek and Roman mythology; aspects and approaches to the study of myth; archaeological and nonliterary sources. Junior standing or departmental approval required.

330-4 Studies in Ancient Law and Government
The law and legal systems of Greece and Rome; government and administration; political problems of the ancient world. Junior standing or departmental approval required.

340-4 Studies in Ancient Art and Archaeology
(Listed jointly with Department of Art and Art History; see ART 411.) Greece in the Bronze Age; classical Greece and Rome; selected areas of Greek and Roman archaeology. Junior standing or departmental approval required.

350-4 Aspects of Ancient Culture and Society
Greek and Roman civilization, with evidence from art, literature, archaeology, law, and other sources. Junior standing or departmental approval required.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of classics.

410-4 Advanced Studies in Antiquity
Literature, mythology, law and government, art and archaeology, culture and society. Students must consult with Department of Classics before registering. Junior standing required.

481-4 Independent Reading
Directed studies in literature, mythology, archaeology, law, and government. Enrollment limited to senior classical humanities majors.

Communication/COM

101-3 Essentials of Public Address
Fundamentals of verbal and nonverbal communication in platform speaking. Discussion and practice in vocal and physical delivery and in purposeful organization and development of a speech.

102-3 Essentials of Interpersonal Communication
Introduction to intrapersonal and interpersonal communication processes as they affect communication style and competence. Emphasis is on a holistic approach to communication by analyzing experiences, behaviors, and skills.

103-4 Communication for Teachers
Principles and practice of oral communication in discussion, reading aloud, storytelling, and public speaking. Enrollment limited to elementary education majors.

104-2 Effective Career Planning
Assists students in developing academic major and career goals through identifying skills and interests and then researching appropriate options.

111-4 Oral Interpretation
Introduction to the oral experience of literature. Theory and practice of oral reading. Frequent performances by students. Not open to students with credit for ENG 115.

128-4 Phonetics
Speech sounds of the English language; phonetic alphabet; introduction to dialects. Required of speech and hearing majors.

130-1 Introduction to Communication Activities
Research, practice, and participation in communication activities. Includes intercollegiate forensic activities, the departmental speakers' bureau, and individual communication assignments. Graded pass/unsatisfactory. Cannot be taken concurrently with COM 330. Permission of instructor required.

133-2 Parliamentary Procedure
Theory and practice in parliamentary procedure including creation of a class organization and construction of a constitution. Practice in framing and debating proposals.

141-3 Small Group Communication
Theory and practice in small group communication with projects in definition, analysis, research, organization, logical processes, and leadership. Recommended for business and professional students and prospective teachers. Lecture, recitation.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>151-4</td>
<td>Introduction to Broadcasting</td>
<td>Fundamentals of broadcasting, including the development of and use of equipment, and practice in effective radio and television speaking.</td>
</tr>
<tr>
<td>203-3</td>
<td>Business Communication</td>
<td>Interorganizational communication skills for job interviewing, persuasive proposals, departmental meetings, oral report presentations, and job appraisals are experienced along with employee communications to accomplish job tasks.</td>
</tr>
<tr>
<td>205-4</td>
<td>Communication Development and Disorders</td>
<td>Development of normal speech, disorders of speech, special problems of speech-handicapped persons, speech therapy and the therapist. Required of speech and hearing majors; recommended for secondary education majors.</td>
</tr>
<tr>
<td>221-2</td>
<td>Voice and Articulation</td>
<td>Development of heightened speech effectiveness for students planning work in professions requiring special speech skills (acting, radio, TV). Offered alternate years.</td>
</tr>
<tr>
<td>232-4</td>
<td>Argumentation and Debate</td>
<td>Projects in analysis, research, briefing, ordering of arguments and evidence, refutation, audience evaluation, argumentative composition, and delivery. Recommended for prospective lawyers, business and professional students, and teachers of speech. Prerequisite: COM 101 or permission of instructor.</td>
</tr>
<tr>
<td>252-4</td>
<td>Mass Communication</td>
<td>Study of the types, functions, and impact of the various mass communication media.</td>
</tr>
<tr>
<td>254-4</td>
<td>Introduction to Journalism</td>
<td>Overview of the role of the press in American society with special emphasis on print media. Topics include the press, government, and the First Amendment.</td>
</tr>
<tr>
<td>256-4</td>
<td>Basic News Writing</td>
<td>Introduction to writing for print media. Structure and organization of news stories. Course requires reporting in the field.</td>
</tr>
<tr>
<td>304-2</td>
<td>Implementing Career Decisions</td>
<td>Assists students in their career/job search. Through research, analysis, and structured exercises the participants learn effective job-seeking skills. Final results for the students should include discovering, exploring, and locating satisfying job situations. Permission of instructor required.</td>
</tr>
<tr>
<td>312-4</td>
<td>Interpretation of Poetry</td>
<td>Advanced study of oral interpretation. Lectures, discussion, and frequent student performances that explore methods of analysis and communicative techniques for oral interpretation of modern poetry. Prerequisite: COM 111 or permission of instructor.</td>
</tr>
<tr>
<td>313-4</td>
<td>Oral Interpretation of Prose</td>
<td>Advanced study of oral interpretation. Lectures, discussion, and frequent student performances that explore methods of analysis and communicative techniques for oral interpretation of fiction. Prerequisite: COM 111 or permission of instructor.</td>
</tr>
<tr>
<td>330-1</td>
<td>Advanced Communication Activities</td>
<td>Research, practice, and participation in tournaments, forums, symposia, exhibition speaking, or an oral communication project designed to meet the interest of the individual student. Graded pass/unsatisfactory. Cannot be taken concurrently with COM 130. Permission of instructor required.</td>
</tr>
<tr>
<td>335-4</td>
<td>Classical Rhetorical Theory</td>
<td>Survey of rhetorical theory in the Greek and Roman world. Emphasis on selected works of Plato, Aristotle, Socrates, Cicero, and Quintilian. Prerequisite: COM 101 or permission of instructor.</td>
</tr>
<tr>
<td>343-4</td>
<td>Communication and Human Relations</td>
<td>Focuses on the need for both personal and professional communication skills. Examines how communication enhances relationships between people, leading to healthy social transactions and productive work situations. Prerequisite: COM 102 or permission of instructor.</td>
</tr>
<tr>
<td>345-4</td>
<td>Public Relations: Principles and Practices</td>
<td>A simulation which focuses on the processes of a public-relations campaign: fact finding, action planning, implementation of communication channels, and program evaluation. Experiences focus on one internal and one external campaign for each student. Prerequisite: COM 203.</td>
</tr>
<tr>
<td>347-4</td>
<td>Case Studies in Public Relations</td>
<td>An in-depth analysis of the public relations process through an examination of various cases involving public relations problems. Prerequisite: COM 345.</td>
</tr>
<tr>
<td>349-4</td>
<td>Marital Communication: Functional Discourse in a Permanent Relationship</td>
<td>An exploration of the role that communication plays in marital relationships. Prerequisite: COM 102 or permission of instructor.</td>
</tr>
<tr>
<td>358-4</td>
<td>Emerging Communication Technologies</td>
<td>An examination of developing communication technologies with special emphasis given to alternative delivery systems.</td>
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<td>Emerging Communication Technologies</td>
<td>An examination of developing communication technologies with special emphasis given to alternative delivery systems.</td>
</tr>
</tbody>
</table>
360-4 Broadcast Journalism
Examination of broadcast news with special attention given to coverage, selection, and reporting of the news. Prerequisite: COM 256 or permission of instructor.

362-4 Broadcast Criticism
Analysis of contemporary programming and production practices including the development of critical standards for evaluation. Prerequisite: COM 151 or permission of instructor.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of speech.

411-4 Performance for the Media
Development of skills necessary for effective television and radio presentations. Study of criteria for selecting appropriate talent and frequent practice in a wide range of media settings. Prerequisite: COM 111 or 151 or permission of instructor.

421-4 Language Development
Development of speech and language in the preschool years. Junior standing required. Prerequisite: COM 205.

429-4 Urban Communications Theory
Processes and institutions by which individuals and groups communicate in an urban environment. Model of an urban communication system developed by interdisciplinary systems approach.

432-4 Female/Male Communication
A comparison and contrast of the communicative modes of women and men with a study of how to improve these transactions.

439-4 Freedom of Speech
Study of the growth and development of free speech in the United States. Special attention given to the development of definitions of free speech and various communication strategies in different settings. Prerequisite: COM 101 or permission of instructor.

441-4 Advanced Interpersonal Communication
An in-depth view of interpersonal communication skills, presenting, receiving, and challenging. A group context is used to promote self-directed changes in interpersonal style. Prerequisite: COM 102 or 203 or permission of instructor.

443-4 Interviewing
Through a matrix organizational structure, students experience theory in selection, survey, journalistic, performance appraisal, persuasion, and counseling interviewing situations with the focus on human resource development. Prerequisite: COM 203.

445-4 Conference Leadership
A simulation which focuses on the creation, development, and execution of a professional conference through assessment of participants' needs. Experiences include completing group tasks through assigned roles developed from current leadership theories. Prerequisite: COM 203 or permission of instructor.

447-4 Organizational Communication
A simulation which focuses on the creation of an organizational product, philosophy, and environment within a designated organizational structure. Experiences include development of communication channels, networks, roles, and climate based on current communication theory. Prerequisite: COM 203 or permission of instructor.

449-4 Survey of Communication Methods
Provides a basic knowledge of the behavioral approach and current theories and experiments in communications research. Prerequisite: COM 233, 441, or permission of instructor.

451-4 Communication Consulting and Training
By means of a matrix structure, consulting and training theories are experienced in communication programs and processes as a methodology for human resource development within organizations. Prerequisite: COM 203, 447, or permission of instructor.

453-4 Communication and Conflict
In-depth study of the function of communication in conflict/crisis situations. Special attention given to the role that communication performs in conflict resolution in intrapersonal, interpersonal, group, and international situations.

454-4 Feature Story Writing
Finding, writing, polishing, and marketing feature material. Prerequisite: COM 256 or permission of instructor.

455-4 Nonverbal Communication
Theory, survey of research, and experiential learning in nonverbal communication. Exploration of types and forms and of methods of sending and receiving nonverbal communication. Prerequisite: COM 102 or 141.

458-4 Editing for the Media
Editing of copy for mass media with special emphasis on newspaper format, headline writing, rewriting, and general copy desk. Prerequisite: COM 256 or permission of instructor.

460-4 Broadcast Programming and Management
Purpose, function, structure, and programming of broadcasting organizations. Prerequisite: COM 151 or permission of instructor.

462-4 Mass Media: Law and Regulation
Study of laws and regulations affecting mass media. Prerequisite: COM 151 or permission of instructor.
Courses/Communication

471-4 Topics in Communication
Examination of special topics in the various areas of speech communication. May be repeated with different titles.

481-1 to 4 Independent Study
Faculty-directed readings and research. Junior or senior standing. 3.0 grade point average in major, and permission of instructor and department chair.

482-1 to 4 Senior Honors Project
Independent studies course for students accepted into the speech communication honors program. Course allows students to pursue research that culminates in a senior honors thesis or project. Completion of nine credit hours of communication honors courses required.

489-4 Communicating with the Elderly
(Listed jointly with Departments of Social Work and Sociology and Anthropology; see SW 389, SOC 489) Analysis of the unique communication behaviors of the elderly and the physical, social, and emotional changes that cause them. Development of interpersonal, interviewing, and reporting skills by direct interaction with this age group. Junior or senior standing required.

491-1 Communication Techniques and Evaluation
The philosophy and techniques of conducting communication events. Includes the planning, initiating, and summarizing of communication activities, and evaluating written and oral performance. May be repeated to a maximum of three credit hours. Permission of instructor required.

Comparative Literature/CPL

201-4, 202-4, 203-4 Masterpieces of Western Literature
Comparative study and analysis of chronologically selected works from the literatures of the Western World. 201: Ancient World and Middle Ages. 202: Renaissance and Neoclassicism. 203: Romanticism to the Modern Period.

210-4 Problems in Comparative Literature
Readings in comparative literature dealing with themes, myths, genres, literary movements, or characters; e.g., the myth of Electra in the modern theatre, the Picaresque novel, Existentialism in European fiction, and the ambitious hero in literature.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of comparative literature.

405-4 Theory of Comparative Literature
History and development of comparative literature as a discipline, study of basic reference works and journals, papers and reports based on comparative studies. Junior standing or permission of instructor required.

Computer Engineering/CEG

260-4 Digital Computer Hardware-Switching Circuits
(Listed jointly with School of Engineering; see EGR 351) Provides computer scientists, engineers, and other computer users with terminology and understanding of physical components used in computer hardware. Topics include switching algebra and switching functions, logic design of combinational and sequential circuits using TTL, combinational logic design with MSI and LSI, busing, storage elements and instrumentation. 3 hours lecture, 2 hours lab. Prerequisite: CS 142.

320-4 Computer Organization
Provides computer scientists, engineers, and other computer users with terminology and understanding of functional organizations and sequential operation of a digital computer. Introduction to program structure, machine and assembly language, stored programs, computer arithmetic, input/output, peripherals, and interfaces. Computer description using a register transfer computer design language. 3 hours lecture, 2 hours lab. Prerequisite: CEG 260, CS 146.

360-4 Digital System Design
(Listed jointly with School of Engineering; see EGR 451) Design of digital systems. Topics include flip-flops, timers, registers, digital arithmetic, register-level design, memory devices and their logic, controller and processor design, computer logic design, and microcomputer system design. Students must show competency in the design of digital systems. 3 hours lecture, 2 hours lab. Prerequisite: CEG 260.

391-4 Introduction to Data Communication
Principles of digital communication discussed from a conceptual point of view with an elementary survey of theoretical aspects. Trends analyzed in the context of competing technologies, changing needs, and emerging new technologies.
392-4 Use of Microprocessors
Introduction to the design and development of software and computer interfacing hardware for effective utilization of microprocessors in process control, data collecting, and other special purpose computing systems. Software topics include loaders, assembly language programming, input/output, interrupts, and timing problems. 3 hours lecture, 2 hours lab. May be taken for letter grade or pass/unsatisfactory. Computer science majors may not take course for credit.

399-1 to 5 Selected Topics
Topics vary from quarter to quarter. May be taken for letter grade or pass/unsatisfactory.

402-4 Introduction to Computer Communication Design
Survey of modern digital communications techniques. Specific focus on serial transmission over public communications channels. Topics include information content and coding, asynchronous and synchronous formats, concentrating and multiplexing, channel properties, modulation techniques, common carrier services, error sources and control, regulatory policies, network, and their analyses. Students must design both hardware and software components of computer communications systems. 3 hours lecture, 2 hours lab. Knowledge of a higher order language required. Prerequisite: CEG 360.

421-4 Microcomputer Design Projects
An in-depth study of the design and use of microcomputer systems. Computer organization and interface facilities are examined. Hardware/software projects are required to develop techniques for hardware and software design of open-ended projects. 3 hours lecture, 2 hours lab. Prerequisite: CEG 360, 430.

430-4 Assembly Language Programming
Use of an operating system: its file structure, utilities, editor, assemblers, and linker to construct programs. Assembler topics include addressing, stacks and argument passing, arithmetic operations, input/output, traps, and macros. 3 hours lecture, 2 hours lab. Prerequisite: CEG 320, CS 400.

431-4 Real-Time Software Design
Concurrent programming, concurrency, processes, synchronization. Concepts are used together with interrupts to construct the kernel of an operating system and concurrent processes for I/O and user programs. Students must show competency in the design of real-time multitasking software. 3 hours lecture, 2 hours lab. Prerequisite: CEG 430.

453-4 Design of Computing Systems
Laboratory projects combine engineering hardware and computer science software concepts in the design and implementation of small special purpose computer systems. 3 hours lecture, 2 hours lab. Prerequisite: CEG 360, 430.

456-4 Introduction to Robotics
(Listed jointly with School of Engineering; see EGR 456.) Introduction to the mathematics, programming, and control of robots. Topics include coordinate systems and transformations, kinematic equations, trajectory planning, dynamics, control, programming, and computer vision. Senior standing in computer engineering, computer science, or engineering, and permission of instructor required. Prerequisite: MTH 233.

476-4 Computer Graphics
(Listed jointly with Department of Mathematics and Statistics; see MTH 476.) Principles of computer graphics: representation of two- and three-dimensional space on a display. Data compression. Hidden surface problems: displays, input, graphics, software packages, real-time applications. Students must show ability to apply the concepts in the design of graphics software. 3 hours lecture, 2 hours lab. Prerequisite: CS 400, MTH 253.

477-4 Computer Graphics II
(Listed jointly with Department of Mathematics and Statistics; see MTH 477.) Continuation of CEG 476. Covers selected topics in detail, including hidden line and surface removal, shading models, curved surface generation, and color models. Students are expected to understand and implement sophisticated algorithms in these areas. Projects are individualized and creative. Selected papers are used for in-depth material. Emphasis is on the design of graphics systems. 3 hours lecture, 2 hours lab. Prerequisite: CEG 476.

499-1 to 5 Selected Topics
Topics vary from quarter to quarter. May be taken for letter grade or pass/unsatisfactory. Senior standing and permission of instructor required.

Computer Science/CS

141-4 Computer Programming I
Introduction to use of computers as a problem-solving tool. Examples from and applications to a broad range of problems. Methodology for algorithm design and for structured modular implementation is stressed. 3 hours lecture, 2 hours lab. Prerequisite: MTH 127 or at least Level 4 on math placement test.
142-4 Computer Programming II
Concepts introduced in CS 141 are developed in greater detail and depth. Emphasis is on verification and testing of programs. 3 hours lecture, 2 hours lab. Prerequisite: CS 141.

146-4 Introduction to Data Structures
Introduction to computer programming for computing majors. Topics include program design, style, debugging, and testing, especially for larger programs: algorithmic analysis, and basic aspects of string processing, recursion, internal search/ sort methods, and simple data structure. 3 hours lecture, 2 hours lab. Prerequisite: CS 142.

200-3 COBOL for Nonprogrammers
Data processing with the COBOL language. Report preparation, data organization, procedure specification; table handling; program design and documentation; debugging techniques. Not for students who intend to become programmers. Computer science majors may not take course for credit. Prerequisite: CS 141 or AIS 103.

205-4 Computer Literacy and Office Automation
An introductory course in the use of computers in a professional environment. Personal computer work stations are employed and used for popular applications, e.g., word processing, spreadsheets and data base management, and electronic mail. 2 hours lecture, 4 hours lab.

210-3 Introduction to FORTRAN for Engineers
Introduction to digital computers and computer programming with FORTRAN language. Algorithms and techniques useful to engineers. Data representation, debugging, and program verification. Programming assignments include solution of simultaneous equations, zeros of transcendental equations, numerical integration and differentiation, matrix operations, and complex arithmetic. Prerequisite: MTH 132.

300-4, 301-4 COBOL Programming I, II
Elements of COBOL language: techniques for debugging and interpreting computer output; linkage to subroutines and overlays; file structure involving both sequential and random access; case studies with business applications. 3 hours lecture, 2 hours lab. Prerequisite: for 300, CS 142; for 301, CS 300.

310-4 Assembly Language Programming—System 360/370
Thorough study of the basic assembly language of the system 360/370. Constant definition, conversions, moves, transfer of control and address manipulation, data manipulation, floating point and decimal modes, dumps, macros, conditional assemblies, and DCBs. Prerequisite: CEG 320.

315-2 Job Control Language
Introduces system 370 job control language. Studies the various JCL statements. Programming exercises are assigned to give students the practical experience needed to create and run various jobs. Prerequisite: CS 300.

316-4, 317-4 Numerical Methods for Digital Computers
Introduction to numerical methods used in the sciences. Methods of interpolation, data smoothing, functional approximation, integration, solutions of systems of equations, and solutions of ordinary differential equations. 3 hours lecture, 2 hours lab. Prerequisite: for 316, CS 142 or 210, MTH 231, MTH 253 or 355; for 317, CS 316, MTH 233.

340-1 Programming Language Workshop
Self-directed study in particular computer languages. Language varies from quarter to quarter. Individual workshops are offered in significant languages such as COBOL, FORTRAN, PL/1, SNOBOL, LISP, SIMSCRIPT, and GPSS. The actual list varies depending on curricular needs and professional significance. May be taken for letter grade or pass/unsatisfactory. Prerequisite: CS 400 or permission of instructor.

393-4 Assembly Language Programming—System 360/370
Topics include elements of machine language and assembly language, constant definition, data conversion, data moves and manipulations, transfer of control and address modification, memory dumps and program debugging, data set definitions and usage, conditional assemblies, and executing and translating instructions. 3 hours lecture, 2 hours lab. Computer science majors may not take course for credit. Knowledge of FORTRAN or COBOL required.

399-1 to 5 Selected Topics
Selected topics in computer science. May be taken for letter grade or pass/unsatisfactory. May be repeated. Permission of instructor required.

400-4 Data Structures and Software Design
Study of the implementation of data structures and control structures in professional computer programs. Introduction to the fundamentals of complexity and analysis. Study of common standard problems and solutions, e.g., transitive closure and critical path. Emphasis is on high-level language software design. 3 hours lecture, 2 hours lab. Prerequisite: CS 146; MTH 253, 257.
405-4 Introduction to Data Base Management Systems
A survey of logical and physical aspects of data base management systems. Hierarchical, network, and relational models of a data base are presented. Physical implementation methods are discussed. Experience in creating and manipulating a data base. Students must show ability to apply the concepts in the design of data base systems. 3 hours lecture, 2 hours lab. Prerequisite: CS 400.

407-3 Optimization Techniques
(Listed jointly with the School of Engineering and Department of Mathematics and Statistics; see EGR 407, MTH 407.) Concepts of minima and maxima; linear programming; simplex method, sensitivity, and duality; transportation and assignment problems; dynamic programming. Prerequisite: MTH 233, 253 or 355.

410-4 Theoretical Foundations of Computing
(Listed jointly with Department of Mathematics and Statistics; see MTH 410.) This course examines the limitations of algorithmic processes in problem solving. The following approaches to this issue are presented: Turing machines, Markov algorithms, recursive functions, and the methods of Kleene and Post. Other topics include Church's hypothesis as well as the halting problem and related decision problems. At least one 300-level mathematics course required. 3 hours lecture, 2 hours lab. Prerequisite: CS 142 and completion of a 400-level math course; or CS 400 and successful completion of at least one 300-level math or statistics course; or CS 433, CEG 320.

433-4 Operating Systems
The role of resource allocation in general computer systems. The problems, techniques, and concepts that arise in multiaccess, multiprogram, and multiprocess systems are emphasized. Students must show ability to apply the concepts in the design of operating systems. 3 hours lecture, 2 hours lab. Prerequisite: CEG 431.

458-3 Applied Graph Theory
(Listed jointly with Department of Mathematics and Statistics; see MTH 458.) Introduction to methods, results, and algorithms from graph theory. Emphasis on graphs as mathematical models applicable to organizational and industrial situations. Prerequisite: CS 142, MTH 231.

466-4 Introduction to Formal Languages
Introduction to the theory and application of formal languages. Emphasis is on those classes of languages commonly encountered by computer scientists (e.g., regular and context-free languages). 3 hours lecture, 2 hours lab. Prerequisite: CS 400, MTH 257, or MTH 257 and completion of a 400-level math or statistics course.

470-4 Systems Simulation
Introduction to simulation and comparison with other techniques. Discrete simulation models. Introduction to queuing theory and stochastic processes. Comparison of simulation languages. Simulation methodology and selected applications. Students must show ability to solve problems using simulation techniques. 3 hours lecture, 2 hours lab. Prerequisite: CS 400, STT 360.

480-4 Comparative Languages
Basic concepts and special purpose facilities in programming languages, examined through several representative languages. 3 hours lecture, 2 hours lab. Prerequisite: CS 400.

499-1 to 5 Selected Topics
Selected topics in computer science. May be repeated. Senior standing and permission of instructor required.

Cooperative Education/CPE

001-0 Cooperative Education
Participation in cooperative education. Departmental approval required.

091-2 to 4, 092-2 to 4, 093-2 to 4, 094-2 to 4
Cooperative Education I, II, III, IV
University-sponsored learning experience in a work setting related to student's academic or career interests. Approved learning objectives, oral and/or written reports, employer evaluation, and final conference with co-op coordinator are required. Cannot be applied toward graduation requirements.

095-2 to 4, 096-2 to 4, 097-2 to 4, 098-2 to 4
Cooperative Education V, VI, VII, VIII
University-sponsored learning experience in a work setting related to student's academic or career interests. Approved learning objectives, oral and/or written reports, employer evaluation, and final conference with co-op coordinator are required. Cannot be applied toward graduation requirements.
172 Courses/Counseling

Counseling/CNL

461-4 Principles of Counseling
Overview of major counseling theories and techniques. Review of historical foundations of the mental health movement. Social, psychological, and philosophical influences are considered.

463-4 Mental Health
Factors influencing behavior of individuals; methods a counselor may use in observing, analyzing, and improving attitudes and behavior. Senior or graduate standing in education or permission of instructor required.

464-4 Crisis Intervention
Introduction to the background, theory, practice, and needs of crisis intervention within the helping professions. A variety of crisis intervention models are explored, as are the various community resources available to the crisis intervention worker. Prerequisite: CNL 461.

470-1 to 6 Counselor Education Workshop
Intensive study of selected areas from counselor education to meet the particular needs of participating students, schools, and agencies. Specific subtitles to be added with individual workshops. May be repeated to a maximum of nine credit hours. Senior or graduate standing in education or permission of instructor required.

Dance/DAN

101-3, 102-3, 103-3 Ballet I
Introduction to vocabulary, techniques, and theories of ballet. Emphasis placed on body alignment and effective methods for gaining strength and flexibility necessary for proper ballet training. Must be taken in sequence.

111-3, 112-3, 113-3 Modern Dance I: Fundamentals of Dance
Introduction to formalized movement: analysis and practice of action in time and space, use of dynamics, body toning, alignment, flexibility, strength, and coordination. Must be taken in sequence.

201-3, 202-3, 203-3 Ballet II
Development of the vocabulary, techniques, and theory of ballet. Emphasis is placed on body alignment and flexibility. Must be taken in sequence. Required of dance majors. Prerequisite: for 201, DAN 103; for 202, DAN 201; for 203, DAN 202.

211-3, 212-3, 213-3 Modern Dance II
Fundamentals of modern dance; emphasis on skeletal alignment, breathing, relaxation, and the use of dynamics and rhythm in space. Must be taken in sequence. Prerequisite: for 211, DAN 113.

251-1, 252-1, 253-1 Dance History
Survey of Western theatrical dance from its roots in early cultures to the twentieth century. Must be taken in sequence. Prerequisite: for 251, DAN 113 or departmental approval; for 252, DAN 251; for 253, DAN 252.

301-3, 302-3, 303-3 Ballet III
Development of the vocabulary, techniques, and theory of ballet. Emphasis placed on body alignment and flexibility. Must be taken in sequence. Required of dance majors. Prerequisite: for 301, DAN 203; for 302, DAN 301; for 303, DAN 302.

311-2, 312-2, 313-2 Modern Dance III
Further study of modern dance techniques and styles. Material is on the intermediate to advanced level. Must be taken in sequence. Prerequisite: for 311, DAN 213.

321-3, 322-3, 323-3 Jazz/Theatre Dance I
Diversified styles and techniques of contemporary musical theatre dancing. Emphasis is on movement proficiency and versatility within the realm of jazz and theatre dance. Must be taken in sequence. Prerequisite: for 321, DAN 213; for 322, DAN 321; for 323, DAN 322.

341-1 Improvisation
An exploration of improvisation techniques as a compositional tool. For dance majors only. Junior standing required. Prerequisite: DAN 213.

342-1, 343-1 Choreography
An exploration of compositional techniques culminating in the creation of solos and ensemble works. For dance majors only. Junior standing required. Prerequisite: for 342, DAN 341; for 343, DAN 342.

371-1, 372-1, 373-1 Dance Pedagogy
Methods for teaching dance using an anatomical approach as the basis for good training in all techniques. Must be taken in sequence. For dance majors only. Junior standing required. Prerequisite: for 371, DAN 252; for 372, DAN 371; for 373, DAN 372.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of dance.

401-3, 402-3, 403-3 Ballet IV
Advanced work in classical ballet technique stressing the development of musicality and virtuosity. Pointe work is included. Must be taken in sequence. Prerequisite: for 401, DAN 303; for 402, DAN 401; for 403, DAN 402; or departmental approval.

411-2, 412-2, 413-2 Modern Dance IV
Advanced work in modern dance techniques and styles. Must be taken in sequence. Prerequisite: for 411, DAN 313.
421-3, 422-3, 423-3 Jazz/Theatre Dance II
Diversified styles and techniques of contemporary musical theatre dancing, including jazz adagio and allegro combinations, and focusing on technique, musicality, style, and performance. Must be taken in sequence. Prerequisite: for 421, DAN 323; for 422, DAN 421; for 423, DAN 422.

491-1, 492-1, 493-1 Senior Dance Project
Advanced work for dance majors in creative projects and/or dance research. Must be taken in sequence. Prerequisite: for 491, DAN 343; for 492, DAN 491; for 493, DAN 492; or departmental approval.

Danish/DN

111-4 Essentials of Danish
Introduction to Danish with an emphasis on speaking the language.

Developmental Education
See Study Skills

Economics/EC

101-4 Economic Ideas and Issues
Introduction to basic economic concepts and application of the concepts to the development of economic systems including the formation and evolution of institutions through the interaction of economic, social, political, and cultural forces, as well as analysis of contemporary issues. Cannot be used as a professional business elective.

201-3, 202-3, 203-3 Principles of Economics
Fundamental economic principles as an aid in understanding modern society. 201: Introduction to Economics; 202: Microeconomics; 203: Macroeconomics. Prerequisite: for 202 and 203, EC 201.

300-3 Consumer Economics
Understanding the economic world in which the consumer lives, works, spends, saves, and frequently invests is stressed. Not open to business or economics majors. Cannot be substituted for any other economics requirements.

330-3 Urban Economic Problems and Prospects
Analysis of economic processes that influence urban economic conditions, population movements, economic problems facing metropolitan areas, and alternative problem-solving techniques. Junior standing required.

Advanced Courses
All of the following courses require junior standing in addition to the listed prerequisites:

301-3 Money and Banking
Analysis of behavior and significance of money, credit, debt, and the banking system. Prerequisite: EC 201, 202, 203 or permission of instructor.

315-4 Intermediate Microeconomics
Develops the analytical tools of microeconomics, stressing market behavior of firms, industries, and consumers. The production process and operation of market mechanisms. Policy implications are emphasized. Prerequisite: EC 201, 202, 203 or permission of instructor.

316-4 Economic Behavior and Sociopolitical Institutions
Focuses on interrelationships between market and nonmarket forces, exploring contemporary social, technological, political, and other influences on resource allocation decisions and on economic change. Prerequisite: EC 201, 202, 203 or permission of instructor.

317-4 Intermediate Macroeconomics
Analysis of national economic problems including inflation, unemployment, interest rates, and economic stability. Emphasizes the impact of public policy. Prerequisite: EC 201, 202, 203 or permission of instructor.

326-3 Economics of Poverty and Discrimination
Analysis of economic causes, effects, and cures for poverty and discrimination. Study of trends, economic explanations, and current programs and legislation.

340-3 Comparative Economic Systems
Comparison of chief characteristics of capitalism, communism, socialism, and facism to clarify the economic process in a free-enterprise society. Prerequisite: EC 201, 202, 203 or permission of instructor.

351-3 Labor Markets and Unions
The determinants of labor market behavior, wages, employment, unemployment. The role of public policy, collective bargaining, and union behavior. Prerequisite: EC 201, 202, 203 or permission of instructor.

352-3 Labor Legislation
Public policy with respect to protective and labor management legislation. Prerequisite: EC 201, 202, 203 or permission of instructor.

354-3 Manpower Analysis and Planning
Application of statistical and manpower tools to human capital development, structural change, planning, training, placement, income maintenance, supporting services, and public policy. Prerequisite: EC 201, 202, 203 or permission of instructor.
370-3 **Environmental Economics**  
Analysis of the economics of water, air, and noise pollution, pesticide use, solid waste disposal, and land use practices. Emphasis on the effectiveness of regulation, prohibition, and zoning as well as subsidies and effluent charges as methods to combat environmental problems. Relationship between environmental decay and over-population, over-urbanization, and economic growth covered. Prerequisite: EC 201, 202, 203 or permission of instructor.

401-3 **Managerial Economics**  
Application of economic analysis to management decision making. Practical methods and problems are stressed. Prerequisite: EC 201, 202, 203 or permission of instructor.

402-3 **Monetary Economics**  
Analysis of monetary policy development and the theory of money market behavior. Emphasizes the relationship between money and national economic conditions. Prerequisite: EC 301.

409-4 **Applied Economics**  
Application of statistics and economic theory to measurement, forecasting, and other economic problems. Prerequisite: EC 201, 202, 203; QBA 201 or equivalent.

410-4 **Mathematical Economics**  
Application of mathematical tools in the formulation of economic theory. Methods used in model construction. College algebra required and calculus recommended. Prerequisite: EC 201, 202, 203.

412-3 **Forecasting Economic Activities**  
Techniques and theories used in forecasting. Practical methods and problems are stressed. Prerequisite: EC 201, 202, 203; QBA 201 or equivalent.

425-4 **Development of Economic Thought**  
Historical development of economic thought and philosophies. Prerequisite: EC 201, 202, 203 or permission of instructor.

431-4 **Federal Finance and the Economy**  
Analysis of federal government expenditures and taxation policies and the impact on economic conditions. Techniques for policy evaluation are discussed. Prerequisite: EC 201, 202, 203 or permission of instructor.

432-4 **State and Local Finance and the Economy**  
Analysis of different taxation policies of state and local governments. Efficient methods of producing public goods such as education and public health services. Prerequisite: EC 201, 202, 203 or permission of instructor.

436-4 **Economics of Regulation**  
Principles and practices of government regulation of business. Emphasis is on public utilities and antitrust policies. Prerequisite: EC 201, 202, 203 or permission of instructor.

440-3 **Regional Economic Growth and Change**  
Regional economic analysis in a policy and planning context. Interdisciplinary approach to analyze the economics of location, interregional trade, regional development, urban regions, and growth strategies. Prerequisite: EC 201, 202, 203 or permission of instructor.

441-3 **International Trade and the Economy**  
Economic reasons for international trade. Impact of trade and trade restrictions on economic aggregates. Prerequisite: EC 201, 202, 203 or permission of instructor.

442-3 **International Monetary Theory and Problems**  
Studies international monetary relations and problems. Focus is on the institutions and arrangements used to finance international trade. Topics discussed include balance of payments, the dollar and foreign exchange markets, Euro currencies, petrodollars and OPEC, and multinational corporations. Prerequisite: EC 201, 202, 203 or permission of instructor.

444-3 **Economic Development and World Poverty**  
Economic development in less developed countries as it relates to population growth, cultural change, and industrialization. Prerequisite: EC 201, 202, 203 or permission of instructor.

454-3 **Economics of Collective Bargaining**  
Development of collective bargaining in the United States; economic cost of labor-management relations. Prerequisite: EC 201, 202, 203 or permission of instructor.

477-3 **Economic Studies**  
Examination of special economic issues. Permission of instructor required.

478-3 **Honors: Independent Study in Economics**  
Research in economics for fulfillment of the Honors Program project requirement. Permission of department chair required.

481-1 to 3, 482-1 to 3, 483-1 to 3 **Independent Reading**  
Limited to students with extensive backgrounds in economics or allied disciplines and with special reasons for in-depth study in a particular area. Permission of instructor and department chair required.

**Education/ED**

101-1 to 2 **Interpersonal Process Learning Laboratory**  
Selection of courses to explore such areas as listening, communicating, life planning, sexuality, the helping relationship, with emphasis on interpersonal process.
200-1 to 3 Education Honors: Special Topics
Introductory seminar to promote leadership in education through the study of special topics (such as futurology, global education, creativity) related to the foundations of educational thought and the context of educational practices. May be repeated up to three times. For teacher education honors scholars only. Departmental approval required.

211-1 to 2 Introduction to Education
Develops an understanding of legal and financial aspects, the organization and function of schools, and the rights and responsibilities of those involved in the educational process. Field/clinical experiences and admission to College of Education and Human Services required. Corequisite: ED 212, 216, 221.

212-1 Self as Teacher
Analysis and evaluation of one's needs, beliefs, attitudes, values, goals, and performance skills as they relate to teaching behavior, professional requirements, community realities, and pupil needs. Field/clinical experiences and admission to College of Education and Human Services required. Corequisite: ED 211, 216, 221.

213-1 Educational Problem Solving
Introduction for prospective teachers to the theory involved in problem solving. How to teach the problem-solving approaches, apply the concept in the cognitive and affective domains, understand the relationship between theory and practical classroom strategies. Field/clinical experiences and admission to College of Education and Human Services required. Corequisite: ED 211, 216, 221.

214-2 Foundations of Education
The interrelationship of social forces and education. The theoretical bases of philosophical, psychological, social, political, and economic issues in contemporary society and their application to the educational process and schooling. Field/clinical experiences and admission to College of Education and Human Services required. Prerequisite: ED 211. Corequisite: ED 213, 222.

215-3 Learning Theories
Designed to afford prospective teachers the beginning skills necessary to apply learning theory and research to the instructional process, and design preventive and remedial strategies relative to student behavior. Admission to College of Education and Human Services required. Prerequisite: ED 211. Corequisite: ED 217, 223.

216-3 Teaching in a Pluralistic Multicultural Society
Introduces the makeup of multicultural/pluralistic schools: racial, religious, economic, social, intellectual, physical, age, and sex differences; and focuses upon implications for education. Admission to College of Education and Human Services required. Corequisite. ED 211, 221.

217-2 Introduction to Classroom Management
Designed to afford prospective teachers the beginning skills necessary to maintain a classroom environment that is optimal for learning. Field/clinical experiences required. Prerequisite: ED 211. Corequisite: ED 215, 223.

219-1 to 8 Assistant Teacher in the Public Schools
Supervised experience in which the student assumes a position as a member of an instructional team to perform such functions as preparing instructional materials, routine managerial tasks, supervising playground, lunch room, bus activities, and working with small groups of pupils. Approval of College of Education and Human Services required.

221-0 Field/Clinical I
Forty hours of field/clinical experiences in which students are introduced to the educational process through participation in a classroom and through an examination of the dynamics of that classroom and its setting. Corequisite: ED 211, 212, 216, or permission of Phase I coordinator.

222-0 Field/Clinical II
Forty hours of field/clinical experiences in which students apply problem-solving strategies to an examination of philosophical, social, political, and economic problems and issues which affect the educational system. Prerequisite: ED 211, 212, 216, 221; or equivalent. Corequisite: ED 213, 214; or permission of Phase I coordinator.

223-0 Field/Clinical III
Forty hours of field/clinical experiences in which students apply knowledge of learning theory and management strategy to their interaction with students.

241-3, 242-3, 243-3 Physical Science
Content of the physical sciences integrated to promote understanding of and intelligent interaction with physical aspects of environment. 3 hours lecture, 1 hour lab. Lecture and lab must be taken concurrently. Prerequisite: for 242, ED 241 or permission of instructor; for 243, ED 242 or permission of instructor.

302-3 Classroom Management
Provides prospective teachers with various strengths used to effectively manage a classroom. Emphasis is on a preventive approach. Field/clinical experiences required. Prerequisite: PSY 111, ED 211 through 217 or equivalent, or permission of instructor.
310-3 Effective Parenting
Assists parents and prospective parents in understanding their child's physical, social, intellectual, and educational development. Consideration given to growth and development patterns, communication with children, discipline, management, child's relationship with the family, and strategies for creating an optimum educational environment.

311-3 Elementary School Science: Curriculum and Materials
Study of basic principles, methods, curriculum trends, and materials; individual laboratory work. Field/clinical experiences required. Admission to College of Education and Human Services or departmental approval required. Minimum of eleven credit hours in science including ED 241 or permission of instructor required. Prerequisite: ED 211 through 217 or equivalent. Corequisite: ED 327.

315-3 Elementary School Children's Literature: Curriculum and Materials
Introduction to children's literature. Wide reading of children's books with emphasis on selection and use of books and related activities in the elementary school. Field/clinical experiences and departmental approval required. Prerequisite: ED 211 through 217. Corequisite: ED 327.

316-3 Elementary School Language Arts: Curriculum and Materials
Language and communication in elementary school, including practices and materials used in teaching oral and written communication. Field/clinical experiences and departmental approval required. Prerequisite: ED 315 or equivalent. Corequisite: ED 327.

317-3 Elementary School Reading: Curriculum and Materials
Practice and materials used in the teaching of reading and related skills in the elementary school. Field/clinical experiences and departmental approval required. Prerequisite: ED 315, 316, or equivalent.

321-0, 322-0, 323-0 Field/Clinical IV, V, VI
Sixty hours of field/clinical experiences in the public schools in which students implement teaching strategies that have been introduced in the Phase II methods components. For 321, completion of Phase I and registration in Phase II required. For 322 and 323, permission of Phase II coordinator required. Prerequisite: for 322, ED 321; for 323, ED 322. Corequisite: for 321, ED 327 or permission of Phase II coordinator.

327-3 Teaching Skills
Explores the use of basic skills in planning, motivation, questioning, audiovisual equipment and production, alternative instructional strategies, and management techniques that help facilitate instruction. Enrollment during first quarter of Phase II or special permission from adviser required. Prerequisite: ED 211 through 217. Corequisite: ED 321.

332-3 Secondary School English: Curriculum and Materials
Curriculum, methods, and materials for language arts in the secondary school, current trends in teaching English. Field/clinical experiences required. Admission to College of Education and Human Services or departmental approval required. Junior standing and twenty-two credit hours in the teaching field including ENG 341 required. Prerequisite: ED 211 through 217 or equivalent. Corequisite: ED 327.

333-3 Secondary Speech and Drama: Curriculum and Materials
Curriculum and materials for those preparing to teach speech and drama in secondary schools curriculum, teaching methods, class organization, producing plays, and cocurricular activities. Field/clinical experiences required. Junior standing and twenty-four credit hours in the teaching field with at least nine credit hours at the 300-level or above required. Prerequisite: ED 211 through 217 or equivalent. Corequisite: ED 327.

334-3 Modern Foreign Languages: Curriculum and Materials
Modern language curriculum in public schools; purposes, methods, materials. Field/clinical experiences required. Completion of a 200-level language course and junior standing or permission of instructor required. Prerequisite: ED 211 through 217. Corequisite: ED 327.

335-3 Business Mathematics for Business Teachers
Course designed for business education majors to review, demonstrate, and develop teaching strategies applicable to consumer math. Teaching methods integrated with the basic math fundamentals and other math applications. Enrollment limited to business education majors.

370-1 to 9 Independent Reading and Minor Problems
Planned reading and/or project under the guidance of a faculty member of the College of Education and Human Services. Senior standing in education and written consent of dean prior to registration required. Maximum of three credit hours may be taken in any one quarter.
Advanced Courses
All of the following courses require junior or senior standing in education in addition to the listed prerequisites.

400-1 to 9 Education Honors Research
Independent study in depth under the guidance of a faculty adviser. Admission to honors program in Division of Teacher Education required.

403-3 to 4 Child Development
Factors that influence growth and development. Prerequisite: ED 211 through 217 or equivalent.

404-3 Adolescent Development
Examination of adolescence; particular attention to physical development and its psychological and social concomitants and to the effect upon the adolescent of social forces, especially school. Departmental approval required. Prerequisite: ED 211 through 217 or equivalent.

405-1 to 4 Current Tendencies in Education
Consideration of current trends and theories in education; development of criteria and procedures for their evaluation and implementation. May be repeated to a maximum of twelve credit hours.

406-3 Survey of Vocational Education
An overview of the instructional programs in vocational education with emphasis on the types of programs, their administration, and their relationship to other phases of education. The vocational services covered include business and marketing education, agriculture education, home economics education, industrial arts education, health occupations, technical education, trade and industrial education, and vocational guidance.

407-3 Cooperative Office Education
Qualifying course for Cooperative Office Education programs. An overview of Cooperative Office Education with emphasis on coordinating techniques applicable in high school, post-high school, and adult training areas. Prerequisite: ED 433.

408-3 Intensive Office Education
Qualifying course for Intensive Office Education. Comprehensive study in developing procedures and principles in program construction, selection, improvement, implementation, and development of program guidelines. Prerequisite: ED 433.

409-4 Early Childhood Curriculum and Materials: Sociocultural
Historical, philosophical, and sociological aspects of early childhood education. Emphasis is on the development of race awareness in young children and the development of self concept. Prerequisite: ED 411 or 412 or permission of instructor.

411-4 Early Childhood Education
Introduction to, and history and development of, the profession of early childhood education. Focus is on job opportunities, professional organizations, and needs and development levels of the young child. Includes basic information about skills and competencies necessary for teaching young children. Field/clinical experiences required. Admission to College of Education and Human Services or departmental approval required. Prerequisite: ED 211 through 217 or equivalent.

412-4 Kindergarten: Curriculum and Materials
Various types of early childhood programs in the United States. Research in historical background of such programs. Review of basic human growth and learning principles significant for understanding young children, prenatal through age eight. Focus on planning effective preschool and early learning programs. Field/clinical experiences required. Admission to College of Education and Human Services or departmental approval required. Prerequisite: ED 211 through 217 or equivalent.

413-3 Elementary School Geometry: Curriculum and Materials
Improvement of Elementary Reading Instruction
Inquiry through a laboratory approach emphasized. Prerequisite: ED 241, 242, 243; BIO 101, 102, 103; or equivalent or permission of instructor.
417-3 to 4 Elementary School Social Studies: Curriculum and Materials
Objectives, principles, and trends in elementary social studies education. Field/clinical experiences required. Departmental approval required. Prerequisite: ED 211 through 217 or equivalent.

418-3 to 4 Empirical Mathematical Instruction in the Elementary School
For teachers or supervisors who desire study in improvement of instruction. Prerequisite: ED 211 through 217 or equivalent; ED 437 or equivalent.

419-4 to 14 Supervised Teaching, Elementary
Student teachers, assigned to a public school full time, work under direct supervision of an experienced classroom teacher. In the fall, student teaching begins in late August to early September with the opening of the public schools and continues for approximately fourteen weeks to the end of fall quarter. During the winter quarter, the period of student teaching corresponds with the academic quarter dates. During spring quarter, student teaching begins on the Monday of the university’s spring break and continues to the end of the quarter with time off according to the public school’s calendar for its spring break. A student may receive fourteen credit hours for student teaching in the fall and twelve credit hours for winter and spring quarters. There is no student teaching during the summer. Formal application must be made through the office of the director of laboratory experiences according to the following schedule: for fall quarter, apply first two weeks of preceding March; for winter quarter, apply last two weeks of preceding September; and for spring quarter, apply last two weeks of preceding November. Concurrent enrollment in ED 422 and permission of director of laboratory experiences required. Student teaching and ED 422 constitute a full load for the quarter. No other course work may be taken with the exception of ED 440. Completion of 112 credit hours (at least twelve of which must have been taken at Wright State), participation experiences, the currently required cumulative grade point average, and completion of ED 315, 316, 317, 347, or equivalent with grades of C or better required. In addition, students in special education must also complete ED 302, 441, 442, 455, and 456 with grades of C or better. Students seeking kindergarten certification must also complete either ED 411 or 412 or 414, with a grade of C or better.

420-2 to 4 Studies in English Education
Focuses on theoretical issues and practical problems of teaching English at all levels to meet the needs of teachers of English to speakers of other languages (TESOL). Includes theory and evaluation procedures for TESOL.

421-3 Books and the Educational Program
Knowledge of wide range of children’s literature, including the selection criteria and the rationale for classroom practices with children’s literature. Prerequisite: ED 315, 316, 317, or equivalent.

422-1 to 3 Student Teaching Seminar
Discussion of problems and concerns encountered during student teaching to bring professional theory and practice into working perspective. Corequisite: ED 419 or 429.

426-2 to 5 Outdoor Education
Provides teachers and leaders seeking skills in the use of the out-of-doors a resource for program or curriculum enrichment: laboratory experiences and field work in a variety of biotic communities emphasizing ecological relationships.

429-4 to 15 Supervised Teaching, Secondary
Same as ED 419 except applied to secondary level. Requirements: appropriate curriculum and materials course with grade of C or better and ED 464 with grade of C or better; completion of 126 credit hours (at least twelve of which must have been taken at Wright State, normally including work in both academic major and professional education); participation experiences; the currently required grade point average and the currently required teaching field cumulative grade point average. Specific course prerequisites in academic majors vary. See description under major field. Enrollment by permission of Office of Laboratory Experiences. Concurrent enrollment in any course other than ED 422 and ED 440 not permitted. Formal application must be made through the Office of the Director of Laboratory Experiences during the posted times. Concurrent enrollment in ED 422 is required.

430-3 Teaching about Religion in the Public Schools
(Taught jointly with Department of Religion; see REL 430.) Introduction to the historical background and court decisions pertaining to teaching about religion in the public schools; current ways in which religion is taught in the public school; new experimental approaches to teaching about religion.
431-3 Secondary School Science: Curriculum and Materials
Curriculum and materials for teaching science; emphasis on objectives, evaluation, planning, resources and facilities, and curricular trends in science education. Field/clinical experiences required. Junior standing or permission of instructor required. Prerequisite: ED 211 through 217 or equivalent. Corequisite: ED 327.

432-3 Improving Reading in the Secondary School
Techniques of diagnosing and correcting reading problems of secondary students. Exploration of secondary reading problems with emphasis on skill development. Field/clinical experiences required. Prerequisite: ED 211 through 217 or equivalent. Corequisite: ED 327.

433-4 Business Education: Curriculum and Materials in Basic Business Subjects
Designed to acquaint the student with business education philosophy, objectives, and curricula on the secondary level of instruction. Curriculum and materials in basic business subjects, bookkeeping, data processing, and sales communication. Field/clinical experiences required. Prerequisite: ED 211 through 217 or equivalent. Corequisite: ED 327.

434-3 Business Education Curriculum and Materials: Typewriting, Keyboarding, and Office Procedures

Curriculum, methods, and materials in teaching shorthand, transcription, word processing, and secretarial procedures. Field/clinical experiences required. Prerequisite or corequisite: ED 322, OA 203, 213. Corequisite: ED 327.

437-3 Elementary School Mathematics: Curriculum and Materials
Instructional materials and methods of meaningful explanations of mathematics in the elementary school based upon structural properties of number and numeration system studies at this level. Field/clinical experiences required during enrollment in course. Admission to College of Education and Human Services or departmental approval required. Prerequisite: ED 211 through 217 or equivalent. MTH 343. Prerequisite or corequisite: ED 327. (Previously listed as ED 318.)

438-3 Secondary School Mathematics: Curriculum and Materials
Curriculum, methods, and materials in the mathematics of grades 7-12. Field/clinical experiences required. Completion of a minimum of thirty credit hours in mathematics required. Prerequisite: ED 211 through 217 or equivalent. Prerequisite or corequisite: ED 327. Offered winter quarter only. (Previously listed as ED 338.)

439-3 to 4 Secondary School Social Studies: Curriculum and Materials
Objectives, principles, and trends in secondary social studies education. Field/clinical experiences required. Completion of thirty credit hours in history for history education majors, and completion of seventy credit hours in the field for social studies comprehensive education majors required. Prerequisite: ED 211 through 217 or equivalent. Corequisite: ED 327.

440-1 to 4 The Teacher in School and Society
A seminar dealing with the legal and social issues affecting education, and the development of a personal philosophy of education. Prerequisite or corequisite: ED 419 or 429.

441-3 Mental Retardation and Developmental Disabilities
Causes and effects of mental retardation and related developmental disabilities in home, school, and community settings. Junior standing or permission of instructor required. Prerequisite: ED 211 through 217, 403, 441, 455, or equivalent. (See additional prerequisites in concentration description.)

442-4 Curriculum Development and Materials for Exceptional Individuals
Practices and procedures used in developing curricula for exceptional children, including preparation, selection, and adaptation of instructional materials. Emphasis on a persisting life problems approach including social studies and science content. Field/clinical experiences required. Junior standing or permission of instructor required. Prerequisite: ED 211 through 217, 403, 441, 455, or equivalent (ED 441 and 455 may be taken concurrently).

445-3 Career Education and Occupational Training for Exceptional Individuals
Role of occupational training in the curriculum; relationships with the world of work; problems of organizing and administering; methods and techniques used in developing occupational interests and abilities at various levels. Field/clinical experiences required. Junior standing or permission of instructor required. Prerequisite: ED 441, 442, 455 or departmental approval.
447-4 Teaching in the Public School
Study, observation, and evaluation of practices. Open only to students who have completed the pertinent curriculum and materials course and are seeking a waiver of all or part of student teaching on the basis of full-time teaching experience.

448-3 Improvement of Social Studies Instruction
An in-depth analysis of new social studies resource materials and curriculum models with an emphasis toward improving instruction. Prerequisite: ED 417 or 439.

451-3 Introduction to the Multiply Impaired Individual
A review of etiological aspects, educational and training programs, concerns and issues related to multiply handicapped individuals including trainable retarded, autistic, and severely and profoundly physically and mentally handicapped people. Observation and participation are required. Permission of instructor required. Prerequisite: ED 302, 403, 441.

452-3 Education of Children and Youth with Physical, Sensory, and Communication Disorders
An overview of the etiology and educational implications of physical disabilities, sensory deficits, and communication disorders. Emphasis is placed on psycho-educational, physical, and medical needs of these individuals. Participation is required. Prerequisite: ED 451 or permission of instructor.

453-3 Education and Training of the Multiply Impaired Individual
Reviews organizations, methods, materials, and techniques for educating and training multiply handicapped children, youth, and adults. Related professional organizations and community services are reviewed. Participation with clients is required. Prerequisite: ED 451.

454-3 Administration and Interpretation of Educational Data
Students learn to administer and interpret formal and informal educational assessment instruments and to communicate assessment data to parents and colleagues. Prerequisite: ED 211 through 217, 441, 455 (ED 441 and 455 may be taken concurrently).

455-2 Education of Individuals with Learning Disabilities and Behavior Disorders
Overview of specific problems of and major remedial approaches to children with learning disabilities and behavior disorders. Prerequisite: for elementary majors, ED 211 through 217, 403, 441 (ED 441 may be taken concurrently); for non-elementary majors, ED 317, 437; junior standing, or permission of instructor.

456-3 to 5 Clinical Practice in Remediation
Supervised clinical practice in the diagnostic teaching of exceptional individuals. Emphasis on assessment, reading, and math curriculum and materials. 2 hours lecture, 2 hours lab. Prerequisite: ED 317 or 415, 437, 441, 442, 454, 455.

457-4 Mental Health and the Retarded Client
Reviews mental health needs and problems of the mentally retarded client and special remediation techniques. Both mildly retarded and moderately/severely/profoundly retarded (MSPR) clients are addressed. Requires observation and participation with clients.

458-1 to 9 Practicum in Education
A supervised teaching experience for students who have completed student teaching (or its equivalent) and are seeking certification in another field. Topics vary from quarter to quarter. Permission of instructor and completion of a minimum of six credit hours of professional education at Wright State required.

459-3 Techniques for Counseling Parents of Exceptional Individuals
Overview of the exceptional child's effects on the family unit and concerns and feelings of family about child. Techniques in counseling parents of special children. Prerequisite: ED 441, 455, or permission of instructor.

460-1 to 4 Practicum in English Education
Students are assigned to an instructional class which focuses upon the teaching of English to speakers of other languages (TESOL) for a supervised practicum experience. Graded pass/unsatisfactory. Prerequisite: ED 420.

462-3 Student Personality and Development Problems
Applied personality and developmental theories, perspectives in mental health, and family and school environmental influences toward the recognition and resolution of the problems of pupils. Senior or graduate standing in education or permission of instructor required.

464-3 to 4 Evaluation
Evaluation of learning, including selected forms of measurement and interpretation of data; sociometric techniques, anecdotal records, and testing. Departmental permission required. Prerequisite: ED 211 through 217 or permission of instructor.

470-1 to 6 Curriculum and Instruction Workshop
Intensive study of a selected area of the school curriculum to meet the particular needs of the participating preservice and inservice teachers, administrators, and curriculum supervisors. Specific topics to be added for individual workshops. May be repeated to a maximum of nine credit hours. Senior or graduate standing in education or permission of instructor required.
490-3 to 12 *Internship in the Schools*
Assuming major responsibility for a group of pupils in a classroom setting for an academic year while having the support and guidance of school and university personnel. Senior standing, satisfactory completion of student teaching, and completion of a minimum of 162 credit hours required.

**Engineering/EGR**

**121-2.5 Engineering Drawing**
Covers basic techniques of proper use of drafting instruments in general. Includes exercises in lettering, types of lines, freehand sketching, geometric constructions, multiview projections, sectional, auxiliary, and pictorial views, and dimensioning. 1 hour lecture, 3 hours lab. Meets at Sinclair Community College.

**141-3 Development of Engineering and Technology**
Historical perspective of the development of engineering, science, and technology, including the interrelationship of technology and society. Engineering as a modern profession. Open to all students.

**142-4 Introduction to Engineering Analysis**
Introduction to engineering analysis: dimensions and units, electric circuits; vector algebra; use of analog and digital computers. 3 hours lecture, 2 hours lab. Prerequisite: MTH 130, 131.

**212-4 Statics**
Forces, resultant components, equilibrium of particles, equilibrium of rigid bodies, centroids and centers of gravity, analysis of structures, friction, moments of inertia. Prerequisite: MTH 231.

**213-4 Dynamics**
Vector treatment of the kinematics and kinetics of particles and rigid bodies, based on Newton's laws and including work-energy and impulse-momentum techniques. Prerequisite: EGR 212, PHY 240.

**231-1 Contemporary Areas of Engineering Physics**
Specification of areas to which engineering physics is relevant. Discussion of specific problems in fields such as space science, fluid and plasma dynamics, thermal science, lasers, instrumentation, design utilization of material properties, and nuclear engineering. For present or tentative engineering physics majors.

**300-4 Technology and Society**
(Taught jointly with Departments of Religion and Sociology and Anthropology; see REL 300, SOC 311.) Important developments in engineering and technology and their interrelations with society and human values. Analysis of significant historical events in technology and their social consequences. Assessment of possible impact upon society of contemporary technological developments. Open to all juniors and seniors.

**306-4 Engineering Psychology**
(Listed jointly with Department of Psychology; see PSY 306) Introduction to the study of human factors in the design and operation of machine systems. Prerequisite: PSY 111, 112.

**313-4 Strength of Materials**
Axial and shear stresses and strains, biaxial loading, torsion of circular shafts; shear and bending moment diagrams; deflection of beams; column theory. 3 hours lecture, 2 hours lab. Prerequisite: EGR 212, PHY 240.

**315-4 Thermodynamics**
Classical thermodynamics with primary emphasis on application of the first and second laws to thermal systems. Introduction to physical and chemical equilibria. Prerequisite: PHY 241.

**317-4 Fluid Dynamics**
Study of fluid properties; fluid statics, one-dimensional compressible and incompressible flows, flow of real fluids, flow measurement. 3 hours lecture, 2 hours lab. Prerequisite: EGR 315.

**318-4 Heat Transfer**
Principles that govern heat transfer in solids, in fluids, in vacuum, and at interfaces of solids and fluids. Laboratory experiments to illustrate these phenomena. 3 hours lecture, 2 hours lab. Prerequisite: EGR 317.

**320-5 Direct and Alternating Circuit Analysis**
Major topics for this basic circuit theory course include component laws, network topology, node and mesh analysis, computer solution techniques, and sinusoidal steady-state analysis. Emphasis is on linearity and the interrelationship between the frequency and time domains. 4 hours lecture, 2 hours lab. Prerequisite: CS 142 or 210, MTH 233, PHY 242.

**321-4 Linear Systems I**
Considers systems in a broad context including linear, nonlinear, variant, invariant, analog and discrete. The various approaches to system and signal modeling are also discussed with special attention to the Fourier transform technique. 4 hours lecture, 1 hour recitation. Prerequisite: EGR 320.
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322-3 Linear Systems II

Extends techniques of EGR 321. Introduces convolution and emphasizes the relationship among convolution, the system function, and the differential equation description. Develops the Laplace and z-transform techniques and provides an introduction to digital filter theory. Prerequisite: EGR 321.

323-4.5 Discrete Systems

Extends the techniques of EGR 321 and 322 to discrete time systems. System descriptions using difference equations, transfer functions, singularity function response, and pole zero locations. System response using classical difference equation solutions, discrete convolution and z-transform methods, stability, frequency response, discrete and fast Fourier transforms, digital filter synthesis. 3 hours lecture, 3 hours lab. Prerequisite: EGR 322.

327-3.5 Introduction to Analog Systems

Electrical and mechanical analog computing components, solutions to algebraic and differential equations, time and amplitude scaling, simulation techniques. 2 hours lecture, 3 hours lab. Prerequisite: EGR 321.

341-4.5 Electronic Devices

Introduction to basic solid-state electron devices. Fundamentals necessary for comprehension and further study of modern electronics. Major topics include carrier flow in semiconductors, p-n junction theory, semiconductor diodes, bipolar junction transistors, field effect transistors, biasing, introduction to amplifiers. 3 hours lecture, 3 hours lab. Prerequisite: EGR 320.

345-4 Electromagnetics

Electrostatics and magnetics, induced electromotive force. Maxwell's equations and their physical interpretation and application. Prerequisite: EGR 320, MTH 232.

346-3 to 4 Transmission Lines, Waveguides, and Radiating Systems

Plane waves in free space and matter. Development of the transmission line equations, application of Smith charts. Application of Maxwell's equations to the rectangular and circular waveguides, introduction to radiating systems including the dipole and loop antennas. Actual design of typical systems containing transmission lines, waveguides, and antennas. Permission of instructor required. Prerequisite: EGR 345.

351-4 Switching Theory and Circuits

(Listed jointly with Computer Engineering: see CEG 260.) Switching algebra and switching functions, logical design of combinational and sequential switching circuits using integrated circuits. 3 hours lecture, 2 hours lab. Junior standing or permission of instructor required. (Previously listed as EGR 450.)

356-4 Principles of Nuclear Engineering

Radioactivity and neutron physics, nuclear and thermal analysis of fission power systems, nuclear safety, nuclear regulatory and environmental impact requirements. Prerequisite: MTH 233, PHY 242.

360-4 Mechanical Vibrations

Modeling and analysis of single and multi-degree of freedom systems under free and forced vibration and impact, Lagrangian and matrix formulations, energy methods, introduction to random vibrations. Prerequisite: EGR 213, 322.

370-4 Materials Engineering Science

Introduction to engineering materials including metals, ceramics, polymers, and composites. Emphasizes the relationships among atomic structure, microstructure, material properties, failure modes, processing, and fabrication. Applications to materials selection. Prerequisite: CHM 122, PHY 240.

375-3 Physical Metallurgy I: Metallurgical Thermodynamics

Application of classical thermodynamics to metals and alloys. Free energy concepts; thermodynamic fundamentals of phase equilibria; single phase and multi-phase alloy systems. Prerequisite: EGR 370. Prerequisite or corequisite: EGR 315.

376-3 Physical Metallurgy II: Transformations in Metals

Fundamentals of phase transformations in metals and alloys. Applications to recovery and recrystallization, solidification, heat treatment of steel, and precipitation hardening. Prerequisite: EGR 375.

385-2 Metallography Laboratory

Preparation of metallographic specimens, use of the metallurgical microscope including the preparation of photomicrographs. Prerequisite: EGR 370.

386-2 Materials Testing Laboratory

Fundamentals of mechanical testing instrumentation and techniques including the tensile test, hardness tests, effect of heat-treatment on strength, and correlation of microstructure, composition, and properties. Prerequisite: EGR 375, 385.
403-4.5 Measurement Systems
General concepts of measurement instrumentation of physical quantities and specific measuring devices for motion, force, torque, pressure, sound, flow, and temperature measurement. 3 hours lecture, 3 hours lab. Prerequisite: EGR 322 or permission of instructor.

405-5 Applied Electronics
Application of modern electronics for use in instrumentation and data, principally utilizing integrated circuits. Topics include useful circuit laws, transistor switches, flip-flops, ideal linear voltage amplifiers, operational amplifiers, feedback amplifiers, and measuring instruments. 3 hours lecture or independent study, 4 hours lab. Credit will not be granted to students with credit for EGR 341. Prerequisite: EGR 320.

407-3 Optimization Techniques
Concepts of minima and maxima; linear programming: simplex method, sensitivity, and duality; transportation and assignment problems; dynamic programming. Prerequisite: MTH 233, 253, or permission of instructor.

411-4 Advanced Dynamics

412-4 Introduction to Finite Element Analysis
Finite element formulations for line, surface, bending, torsion, and three dimensional elements. Numerical methods and application of FEM programs in structural design and solid mechanics. Prerequisite: EGR 313, CS 210, MTH 233.

414-4 Introduction to Mechanical Design
Application of general principles and empirical relationships of mechanics of solids to the creative design of machines. Prerequisite: EGR 313.

415-3 Advanced Thermodynamics
Power and refrigeration cycles, thermodynamic relations, phase and chemical equilibrium. Prerequisite: EGR 315.

416-4 Advanced Mechanics of Solids

417-3 Mechanics of Viscous Fluids
Fundamental equations of viscous flow for laminar and turbulent flows. Boundary layer analysis. Analytical and numerical solutions of the equation of motion. Prerequisite: EGR 318.

418-3 Heat Conduction in Solids
Analytical and numerical techniques for heat conduction problems in one, two, and three dimensions for steady and transient cases. Phase-change problems. Prerequisite: EGR 318.

419-3 Biomedical Engineering Systems I
Application of engineering and mathematical techniques in the derivation of the basic laws underlying biophysical systems. Topics include transport theory and electrical properties of cell membranes; control theory applied to regulation of body functions. Prerequisite: EGR 213, MTH 233. Corequisite: PHS 218.

420-3 Biomedical Engineering Systems II
Application of the mechanics of fluids and solids together with thermodynamic principles in formulating the basic equations governing cardiovascular and pulmonary functions. Topics include rheology, hemodynamics, lung aerodynamics, cardiac mechanics, and system interactions. Prerequisite: EGR 419. Corequisite: PHS 219.

421-5 Communication Theory
Analysis of linear systems by the Fourier transform and the time convolution integral methods. Introduction to information theory. Comparative evaluation of various analog and pulse modulation techniques. Selected topics from radar theory and electro-optics as well as an introduction to random process theory. Prerequisite: EGR 322.

422-3 Engineering Biophysics
Application of mathematical and engineering techniques toward describing biophysical systems. Topics include cellular transport, electrical properties of membranes, and regulation of blood pressure and body temperature. Prerequisite: EGR 321, PHS 219.

423-4 Energy Conversion
Important new developments in energy conversion. Thermoelectric, photoelectric, thermionic, and electromechanical systems are studied. Prerequisite: EGR 315.

425-4.5 Control Systems I
Introduction to control systems using state variables and classical analysis. Closed loop system representation, block diagrams, time response, frequency response. 3 hours lecture, 3 hours lab. Prerequisite: EGR 322.
426-4.5 Control Systems II
System stability and closed loop response are analyzed using Routh-Hurwitz, Nyquist, and root locus techniques. System specifications and compensation are realized using state variables and classical analysis. 3 hours lecture, 3 hours lab. Prerequisite: EGR 425.

427-4 Digital Control Systems
Sampled spectra and aliasing; design of digital control systems using transform techniques and state-space methods; discrete equivalents to continuous transfer functions; quantization effects. 3 hours lecture, 2 hours lab. Prerequisite: EGR 426.

428-3 Biomechanics and Biodynamics
Application of solid and fluid mechanics and thermodynamics toward describing physiological systems. Topics include muscle contraction, cardiac mechanics, hemodynamics, and whole body heat transfer. Prerequisite: EGR 322, PHS 219.

430-4 Distributed Systems
Distributed constants and traveling waves in various types of physical systems. AC steady-state in distributed systems; phase and group velocities; reflections, standing wave ratios, and impedance matching techniques. 3 hours lecture, 2 hours lab. Prerequisite: EGR 425.

432-3 Introduction to Flight Control Systems
Development of the equations for general aircraft motion. Perturbed state equations, basic aerodynamic characteristics, control surface effectiveness, stability and control derivatives, Dynamic stability and control of the airplane. Automatic flight control. Prerequisite: EGR 425.

433-4 Reliability Analysis

435-3 Network Synthesis and Design
Active and passive network analysis, zero-network functions and their realizability, introductory filter concepts and the approximation problem, passive network synthesis, basics of active filter synthesis. Prerequisite: EGR 322.

441-4.5 Electronic Circuits
Theory and application of basic engineering electronics developed for discrete and integrated circuits. Topics include bipolar and field effect transistor amplifier analysis and design, frequency response, multi-stage and feedback amplifiers. 3 hours lecture, 3 hours lab. Prerequisite: EGR 341.

444-4 Linear Integrated Circuits
Theory and applications of linear integrated circuits. Major topics are ideal and real operational amplifiers, frequency response and compensation, active filters, comparators, and waveform generators. 3 hours lecture, 2 hours lab. Prerequisite: EGR 441.

449-4.5 Pulse and Digital Circuits
Design and analysis of pulse and switching circuits including linear wave shaping, diode wave shaping, logic types, DTL, DCL, RTL, TTL, and ECL: bistable, stable, and monostable multivibrators, voltage comparators, Schmitt triggers, blocking oscillators, and magnetic core switching. 3 hours lecture, 3 hours lab. Prerequisite: EGR 441.

451-4 Digital Systems Design
(Listed jointly with Computer Engineering; see CEG 360.) Design of digital systems. Topics include digital arithmetic, register-level design, memory devices and their logic, controller and processor design. 3 hours lecture, 2 hours lab. Prerequisite: EGR 351.

456-4 Introduction to Robotics
(Listed jointly with Computer Engineering; see CEG 456.) Introduction to the mathematics, programming, and control of robots. Topics include coordinate systems and transformations, kinematic equations, trajectory planning, dynamics, control, programming, and computer vision. Senior standing in computer science, computer engineering, or engineering, and permission of instructor required. Prerequisite: MTH 233.

460-3 Design and Analysis of Engineering Experiments
Introduction to planning and analysis of engineering experiments. Covers basic topics required for experimental work and their applications to engineering problems. Brief coverage of basic statistics, probability distributions, tests of hypotheses, linear regression and analysis of variance, and the application of these tools using randomized block, factorial, and fractional factorial experimental design in investigation of engineering problems. Senior standing or permission of instructor required.
461-4 Bioinstrumentation
Principles of design and analysis of electronic instrumentation for biological applications. Topics include transducers, electrodes, signal processors, image processing, and electrical safety. 3 hours lecture; 2 hours lab. Prerequisite: EGR 441.

463-4 Biomedical Computers
Digital computer (hardware) applications in the health care field. Topics include hospital operating room computer systems; microprocessors in clinical and medical research laboratories; computers in rehabilitation engineering. 3 hours lecture; 2 hours lab. Prerequisite: EGR 441.

470-4 Communication Systems Design
Introduction to communication system design. Topics include source characterization and encoding, choice of modems and the tradeoffs involved, choice of received configuration, Techniques developed applied in the design of a deep space communication system. Prerequisite: EGR 322, 421, or permission of instructor.

472-3 Seminar in Human Factors Engineering
Study of current research reports in human factors engineering. Reports studied are selected from recent journals to be representative of work requiring engineering analysis and design as well as psychological experimentation and statistical analysis. Senior standing in human factors engineering required.

475-3 Introduction to Radar Systems
Introductory study of the radar equation, antenna patterns, target cross sections and system losses, radar measurements, pulse doppler and coherent techniques, detection probability and signal-to-noise ratio, side lobe clutter, synthetic arrays and pulse compression techniques. Senior standing required. Prerequisite: EGR 322.

477-4 Mechanical Behavior of Materials
Crystal plasticity and single crystal behavior. Introduction to dislocation theory. Strengthening mechanisms and polycrystalline behavior. Introduction to viscoelasticity. Fracture, fatigue, and creep of materials. Prerequisite: EGR 313, 370.

478-3 X-Ray Spectral Analysis
(Listed jointly with Department of Geological Sciences; see GL 474.) Electron microprobe and x-ray fluorescence for analysis of alloys and other materials explained and demonstrated on examples. 2 hours lecture; 1 hour lab. Prerequisite: EGR 482 or permission of instructor.

479-4 Materials Corrosion
(Listed jointly with Department of Chemistry; see CHM 479.) Survey of principles of corrosion processes with application to metallic and nonmetallic materials. Principles of electrochemistry are included. Prerequisite: EGR 315, 370; or corequisite CHM 453; or permission of instructor.

480-3 Engineering Economy
Introduction to analytical methods and techniques for optimizing the economic outcome of technical and managerial decisions. Includes time value of money, annual costs, present worth, future value, capitalized cost, break-even analysis, and valuation and depreciation. Prerequisite: MTH 132.

481-3 Nondestructive Testing
Survey of the principal techniques used to detect and evaluate flaws in material components such as castings, weldments, and composites. Includes liquid penetrant, ultrasonic, radiographic, eddy current, and magnetic test methods. Prerequisite: EGR 370.

482-4 X-Ray Methods in Materials Science
Introduction to the theory and practice of diffraction methods in the study of alloys, refractory materials, and polymers. 2 hours lecture, 4 hours lab. Prerequisite: EGR 376 or permission of instructor.

483-3 Ceramics and Refractories
An introduction to ceramic materials that includes descriptions of ceramic raw materials, glasses, solid state chemistry, microstructures, elasticity and strength, and thermal stresses. Prerequisite: EGR 375.

485-4 Solidification Processing
Fundamentals of melt solidification, application to metals casting technology, and an introduction to powder metallurgy. 3 hours lecture, 2 hours lab. Prerequisite: EGR 375.

486-4 Deformation Processing
Fundamentals of principal deformation processing systems including forging, extrusion, rolling, and sheet forming; material response and formability; mechanics and analysis of selected processes. 3 hours lecture, 2 hours lab. Prerequisite: EGR 313, 370.

487-4 Machining
Fundamentals of machining with an emphasis on engineering models of machinability, chip formation, cutting forces and power, lubrication. Introduction to numerical control machining. 3 hours lecture, 2 hours lab. Prerequisite: EGR 370.
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488-4 Powder Processing

489-4 Engineering Plastics: Materials, Processes, and Design
(Listed jointly with Department of Chemistry; see CHM 469.) Properties and manufacturing processes of engineering plastics and effect of these factors on plastics design. Illustrative laboratory projects included. 2 hours lecture, 4 hours lab. Prerequisite: CHM 465.

490-4, 491-4 Engineering Design I, II
Independent investigation of contemporary engineering problems under the guidance of an instructor. Topics selected to meet the needs and interests of students. Research of professional literature and submission of an engineering report required. 2 hours lecture, 2 hours lab, 1 hour recitation. Senior standing required.

492-4 Materials Engineering Design
Independent investigation of a contemporary problem in materials science and engineering under faculty guidance. Project design and reporting are emphasized along with analysis, synthesis, and testing. Senior standing in materials science and engineering required.

499-1 to 5 Special Problems in Engineering
Special problems in advanced engineering topics. Topics vary from quarter to quarter. Departmental approval required.

English/ENG

081-4 English for Non-Native Speakers
Basic course in written and spoken communication for non-native speakers of English. May be repeated. Open only to non-native speakers. Cannot be applied toward graduation requirements.

110-2 Overcoming Writer's Block
Concentrates on conquering writer's anxiety through the use of graded prewriting and writing exercises. Permission of instructor or enrollment in Expanding Horizons program required.

111-4 Composition
Concentrates on the writing process and its applications, stressing clarity, conciseness, and correctness.

112-4 Composition
Expository writing, stressing rhetorical principles.

115-4 Oral Interpretation
Introduction to the oral experience of literature. Theory and technique of oral reading. Frequent performances by students. Not open to students with credit for COM 111.

190-4 Issues and Ideas in Literature
Readings in literature dealing with a single theme or a specific problem; for example: Crisis and Confrontation in American Literature, the Images of the Hero in Literature, the Supernatural and Occult in Literature, and Sex and Censorship in Literature.

201-4 Contemporary Literature
Readings in American and British fiction, poetry, and drama of the present and the recent past; for example: American Novel since 1945, Literature of the Absurd, Protest Literature, and Contemporary Poetry.

202-4 The Literary Tradition
Readings in British and American literature; for example, Shakespeare, American Masterpieces, British Novel, and Readings in Biography.

203-4 World Literature
Readings in world literature; for example, The Literature of Africa, the International Best Seller, and the Hero in World Myth.

204-4 Afro-American Literature: Phillis Wheatley to the Present
Study of Afro-American literature, including literary movements, historical backgrounds, and major writers.

205-4 Afro-American Literature: Major Genres
Concentrated study of a particular genre in black literature (novel, drama, poetry), emphasizing recurring images and themes.

210-4 Introduction to Poetry
A study of poetry as a type of literature together with an introduction to various approaches to the enjoyment of poetry.

211-4 Introduction to Fiction
Introduction to the reading of prose fiction, including a study of the elements of fiction, various forms and modes of fiction, and the enjoyment of fiction.

212-4 Introduction to Fiction
Introduction to the study and analysis of drama, including differences among plays of different periods.

240-4 Intermediate Composition
Improvement of writing skills with special attention to individual writing weaknesses. Includes a review of basic writing principles. Prerequisite: ENG 111, 112; or equivalent.

254-4 Introduction to Journalism
(Listed jointly with Department of Communication; see COM 254.) Overview of the role of the press in American society with special emphasis on print media. Topics include the press, government, and the First Amendment.
257-4 Basic News Writing
(Listed jointly with Department of Communication; see COM 256.) Introduction to writing for print media. Structure and organization of news stories. Requires reporting in the field.

330-3 Business Writing
Techniques in business writing with special attention to improving mechanical skills, reviewing forms of business writing, and analyzing business and technical prose. Prerequisite: ENG 111, 112, or equivalent.

333-4 Fundamentals of Technical Writing
Basics of technical writing with emphasis on descriptive techniques, audience analysis, and report writing. Prerequisite: ENG 111, 112, or equivalent.

342-4 Advanced Composition for Elementary Teachers
Study and practice of writing with special attention to informative and creative writing taught in the elementary schools and to problems of teaching writing to elementary school students. Prerequisite: ENG 111, 112, or equivalent.

344-4 Research Writing
Instruction in organization, documentation, and writing of research papers. Research projects based not only on primary and secondary sources but also upon experiment and investigation. Prerequisite: ENG 111, 112, or equivalent.

454-4 Feature Story Writing
(Listed jointly with Department of Communication; see COM 454.) Finding, writing, polishing, and marketing feature material. Prerequisite: ENG 257 or permission of instructor.

458-4 Editing for the Media
(Listed jointly with Department of Communication; see COM 458.) Editing of copy for mass media with special emphasis on newspaper format, headline writing, rewriting, and general copy desk. Prerequisite: ENG 257 or COM 256 or permission of instructor.

495-4 Internship
Practical work experience performing writing-related tasks in cooperation with local business, professional, and service organizations. Performance is supervised and evaluated by the director of Writing Programs. Graded pass/unsatisfactory. Permission of Writing Programs director required.

Major Courses
Unless otherwise specified, successful completion of freshman English is the minimum prerequisite for all major courses. Bachelor of Arts degree candidates majoring in English must meet the minimum major requirements from courses in this group. For majors, ENG 255 and 256 are prerequisite to enrollment in other literature courses in this group.

255-4 English and American Literary History
A course for English majors designed to give a sense of the continuity of literary history.

256-4 Writing About Literature
A basic course in techniques of writing analytical, critical, and scholarly papers about literary topics. Prerequisite: ENG 111, 112, or equivalent.

301-4 Introduction to Creative Writing
Beginning course for students interested in creative writing, with special attention to foundations of the short story and poetry. Prerequisite: ENG 111, 112, or permission of instructor.

302-4 Poetry Writing
Fundamentals of verse writing; practice in traditional and contemporary concepts of poetic form. Prerequisite: ENG 111, 112, or permission of instructor.

303-4 Short Story Writing
Theory and practice of techniques of fiction emphasizing reading of literary models and writing of original stories. Prerequisite: ENG 111, 112, or permission of instructor.

304-4 Dramatic Writing
Theory and practice of techniques of dramatic writing, emphasizing writing of original plays. Prerequisite: ENG 111, 112, or permission of instructor.

309-4 Creative Writing Workshop
For qualified students who wish to develop further their abilities in creative writing. Students work closely with the instructor on advanced projects in poetry, short story, drama, or the novel. May be repeated for credit. Prerequisite: ENG 302 or 303 or 304, or permission of instructor.

341-4 Advanced Composition for Secondary Teachers
Combines study and teaching of composition with practice in writing. Emphasis on expository writing with special attention to evaluation of writing and problems of secondary school teachers.

343-4 Advanced Composition
A course in the refinement of style. Emphasis on sophisticated techniques of expository writing.
351-4 Major English Writers: Chaucer to Shakespeare
Representative works of such major English writers of the medieval period and the sixteenth century as Chaucer, the Pearl-poet, Malory, Sidney, Spenser, Malrowe, and Shakespeare.

352-4 English Literature: Renaissance and Enlightenment
Representative works of such major British writers of the seventeenth and eighteenth centuries as Donne, Jonson, Milton, Dryden, Congreve, Swift, Addison, Steele, Pope, Fielding, Gray, and Johnson.

353-4 English Literature: Romantic and Victorian
Representative works of such major Romantic and Victorian writers as Blake, Austen, Wordsworth, Coleridge, Keats, Shelley, Byron, Carlyle, Dickens, Tennyson, Browning, and Arnold.

354-4 English Literature: Modern Period
Representative works of such major English writers of the modern period as Hopkins, Hardy, Housman, Shaw, Conrad, Yeats, Joyce, Lawrence, Woolf, and Eliot.

355-4 American Literature: Romanticism
Representative works of such major American writers before the Civil War as Cooper, Poe, Emerson, Thoreau, Hawthorne, Melville, and Whitman.

356-4 American Literature: Realism and Naturalism
Representative works of such major American writers from the Civil War to World War I as Dickinson, Twain, James, Howells, Wharton, Crane, and Dreiser.

357-4 American Literature: Modern Period
Representative works of such major American writers since the twenties as Fitzgerald, O'Neill, Frost, Hemingway, Faulkner, and Stevens. Also includes selected contemporary writers.

Note: The following series of “Studies” is intended to provide a wide range of courses approaching literature from a variety of significant viewpoints. Because a large number of courses can be offered under each “Studies” number, students should consult the department for a list and brief description of the particular courses that will be offered during a given academic year. Completion of at least three of the following courses is prerequisite to enrollment in the “Studies” courses: ENG 351, 352, 353, 354, 355, 356, 357.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of English.

410-4 Studies in English Literary History
Courses offered under this number provide intensive study of English literature from the point of view of literary history and are intended to develop an understanding of the historical approach to literature and an ability to deal critically with historical generalizations about literary periods and movements.

420-4 Studies in American Literary History
Courses offered under this number provide intensive study of American literature from the point of view of literary history and are intended to develop an understanding of the historical approach to literature and an ability to deal critically with historical generalizations about literary periods and movements.

430-4 Studies in Major English Writers
Courses offered under this number provide intensive study of the work of single, major English authors and are intended to develop an understanding of individual works of literature in the context of an author’s life and total literary production.

440-4 Studies in Major American Writers
Courses offered under this number provide intensive study of the work of single, major American authors and are intended to develop an understanding of individual works of literature in the context of an author’s life and total literary production.

450-4 Studies in Literary Types and Modes
Courses offered under this number provide intensive study of important literary forms such as poetry, the novel, comedy, tragedy, satire, and the epic, and are intended to develop an understanding of the formal aspects of literature as approached theoretically, analytically, and historically.

460-4 Studies in Literary Themes
Courses offered under this number provide intensive study of literary works in terms of significant and recurring literary themes as they can be traced in various eras, cultures, and literary traditions.

470-4 Studies in Literary Criticism
Courses offered under this number provide intensive study of theoretical, practical, and historical aspects of literary criticism to develop an understanding of important critical questions and approaches.

477-1 to 6 Workshop
Intensive study of selected special topics or problems to meet the particular needs of participating students. Specific titles announced for each workshop. May be repeated for credit subject to departmental, college, and university limits. Junior or senior standing or permission of instructor required.
480-4 Studies in Linguistics
Courses offered under this number provide intensive study of the English language and linguistics and are intended to develop an understanding of historical, comparative, and descriptive approaches to the study of language and of the nature and value of their findings.

490-4 Studies in English Education
Courses offered under this number focus on theoretical issues and practical problems of the teaching of English at all levels to meet the needs of teachers of literature, language, and composition.

491-1 to 3 Directed Reading
Supervised reading in special areas of American, English, or world literature in translation and English language and linguistics not available through course structure. To be arranged with department chair. Senior standing and 3.0 cumulative grade point average required.

494-4 Creative Writing Seminar
Writing of fiction and/or poetry, group discussion of manuscripts, and special assignments in technique, related criticism, and contemporary professional writing. Permission of instructor required. Students must submit a draft of their work before registering. May not be repeated.

497-4 Introduction to Linguistics
Survey of major branches of English linguistics; present-day phonology, morphology, and syntax; history of English and linguistic geography. Junior or senior standing required.

498-2, 499-2 English Honors Tutorial
Two-quarter sequence for senior English majors who are doing an English honors project. Enrollment limited to department-approved honors candidates.

Environmental Studies/ENV

101-3 Our Environmental Crisis
Survey of environmental quality problems intended principally to stimulate awareness of an appreciation for the complexity of the issues that face us.

111-3 Environmental Perspective
Survey of global environmental issues providing background of fundamental principles and an historical perspective.

112-3 Limits to Growth
Systems approach to the study of environment, indicating present state of environmental problems and examining proposed scenarios for the future.

113-3 Value System Alternatives for Society
Examination of environmental issues that reflect expressed or implied value judgments in social, economic, and political institutions.

122-3 Managing Finite Resources
A balanced study of principles, practice, and policy in development and use of material resources, both domestic and foreign, including economics of material substitution and resource recovery.

123-3 Food and the Environment
Environmental issues related to the production of food to sustain a growing world population, including biological, social, economic, political, and ethical concerns.

124-3 Energy Production, Consumption, and Policy
Examination of large-scale energy production and use, including economic, social, political, and environmental implications, development and conservation potentials, and issues for a comprehensive energy policy.

211-3 Earth as an Energy System
Scientific and technical overview of ecosystems, energy, matter, pollution, and functioning of the biosphere.

212-3 Environment and Man as a Social Being
Relationship between physical environment and man's behavior. Perception of space and effects of spatial arrangements on interaction patterns. Analysis of man's capabilities and limitations in design of man-environmental systems.

213-3 Humanistic Perspectives of Environment
Impact of art, literature, philosophy, and religion on man's expressions toward the environment.

214-3 Energy Production: Alternative Solutions
(Listed jointly with Department of Physics; see PHY 214.) Basic energy concepts and physical processes by which natural resources are converted to useful energy. Physical principles are introduced as needed. Recommended preparation: ENV 211.

215-3 The Autonomous Home
Addresses current energy/resource consumption by the family unit. Concepts of integral lifestyle are presented including food production, water supply, and waste and energy management with emphasis on conservation and soft technology alternatives.

222-3 Basic Issues in Air Pollution
A holistic approach to the complex technical, economic, social, and legal issues surrounding air pollution and its control. Particularly appropriate for nonscience majors. Junior standing recommended.
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411-2 to 6 Internship
Individually arranged placement with cooperating agencies in metropolitan area. Junior standing and environmental studies dual major required.

412-6 Research Diving
An intense program to enable the scientist/diver to apply basic research techniques and diving skills to the study of the aquatic environment. Lecture, pool sessions, and required field work. Prerequisite: HPR 101 or equivalent.

413-2 to 6 Applied Environmental Studies
The development and application of tools and techniques toward an environmentally appropriate response to specific issues, needs, and lifestyles. Permission of instructor and a minimum of three courses in environmental studies required. Priority is given to environmental studies dual majors.

499-1 to 5 Special Problems
Research or individual study designed for specific needs and abilities of student. Junior standing and environmental studies dual major required.

Finance/FIN

205-3 Personal Financial Management
Provides knowledge that helps nonbusiness students to effectively manage their personal financial affairs. Topics include personal financial statements, budgeting, tax planning, investing and savings, consumer borrowing, insurance, real estate, and retirement planning. For nonbusiness majors only. Credit will not be granted to students with credit for FIN 305.

231-3 Real Estate: Principles and Practices I
Principles and practices relating to sales, financing, and legal factors affecting real estate. Fundamentals of marketing, closings, interest rates, and ownership considerations are analyzed and discussed.

232-3 Real Estate Law
Basic real property and real estate law. An understanding of legal concepts and terminology for persons who wish to qualify for Ohio Real Estate licenses. Prerequisite: FIN 231 or permission of instructor.

Advanced Courses
All of the following courses require junior standing in addition to the listed prerequisites.

301-3 Business Finance I
Introduction to basic concepts, principles, and analytical techniques of financial management. Emphasis on planning and managing assets. Topics include formulating financial objectives, organizational form, and tax environment: current asset management, short-term financial analysis forecasting and planning; and capital budgeting. Prerequisite: ACC 201, 202, 203; EC 201, 202, 203. Offered every quarter.

302-3 Business Finance II
Continuation of FIN 301. Emphasis on financial structure decisions. Topics include cost of capital, financial leverage, management of short-, intermediate-, and long-term funds; dividend policy, valuation, and mergers. Prerequisite: FIN 301.

303-3 Case Problems in Financial Management
Application of basic financial concepts and analytical techniques to financial decision making. Extensive use of cases. Prerequisite: FIN 301, 302. Offered spring quarter only.

305-3 Personal Financial Planning
Financial problems encountered in managing individual affairs: family budgeting, installment buying, insurance, home ownership, and investing in securities.

331-3 Real Estate Principles and Practices
Basic orientation to the broad field of real estate. Principles, practices, and issues of real estate. The real estate market, types of real property interest, contracts, deeds, financing, home ownership, leases, investment, management, purchasing, selling, role of real estate agent search, examination, registration of title, title closing, the valuation process, city planning, zoning, public housing, urban renewal, and state regulation. Major issues and trends involving economic, political, and social implications in the field of real estate. Successful completion of this course meets part of the licensing requirement for real estate salespeople in Ohio. Recommended for all students.

332-3 Real Estate Law
Includes all areas of law commonly concerned with the typical real estate practitioner and investor-consumer. Topics include the law of agency as applied to real estate brokers and salespeople, law of fixtures, estates (including leases), conveyancing of real estate, real estate managers, zoning, cooperatives, condominiums, and license laws of Ohio. Successful completion of this course meets part of the licensing requirement for real estate salespeople in Ohio.
335-3 Real Estate Brokerage
Real estate practices and management of property from the brokerage office manager's perspective. Managerial, financial, marketing, and legal aspects of real estate brokerage covered in depth. Prerequisite: FIN 331, 332.

351-3 Risk and Insurance
The concept of risk, its implications in decision making, and its effects on social and economic activities. Emphasizes use of insurance as a method of solving the problems of risk encountered by all segments of society. Consumer-oriented and open to all students.

352-3 Life and Health Insurance
Problem of economic insecurity resulting from premature death, disability, and old age. General theory of life and health insurance, its economic and social implications, and underlying principles and reasons for various contract provisions, underwriting practices, and legal doctrines analyzed. Individual and group approaches.

353-3 Property and Liability Risk Management
Analytical study of important property and casualty coverages; insurance management problems facing business firms and individuals; various methods of treating property risks such as fire, windstorm, flood, riot, theft; marine and inland marine, business interruption, corporate suretyship, personal and corporate liability, automobile, workmen's compensation, multiple line policies, and other types of coverage. Major issues and trends analyzed.

401-3 Introduction to Investments
Introduction to the concepts and techniques relevant to the formulation of investment policies, objectives, and strategies for individual investors. Prerequisite: FIN 302, EC 301.

402-3 Investments Analysis and Management
The theory and practice of security analysis and portfolio management. Opportunities for individual investigation of specific problem areas are provided. Prerequisite: FIN 302, EC 301.

411-3 Financial Institutions
Provides an overview of the operation of financial markets and institutions. Topics include loanable funds theory, the level and structure of interest rates, and an examination of the money and capital markets. Prerequisite: FIN 301, 302; EC 301.

412-3 Commercial Banking
Problems of commercial banking discussed from point of view of bank management; determination of proper size of asset reserves; credit analysis required for various kinds of bank loans; investment policies for commercial banks; problems of equity reserves and capital account. Prerequisite: FIN 302, EC 301.

420-3 Seminar in Financial Management
In-depth treatment of advanced problems in managerial finance. Topics include capital budgeting, capital structure theory, cost of capital, dividend policy, and long-term financial management. Prerequisite: FIN 303.

433-3 Real Estate Finance
Major instruments used in financing real estate. Mortgage types, terms, and provisions. Default and foreclosure. Land contracts, leases, sales and leaseback arrangements. The mortgage market, determinants of supply and demand, and the effect of interest rate changes. Financial institutions, government operations. Alternative methods for financing income properties. Successful completion of this course meets part of the licensing requirement for real estate broker in Ohio. Prerequisite: FIN 331.

434-3 Real Estate Valuation and Appraisal
The purpose of appraisal and the concept of value. Factors influencing value. Determination of economic value through capitalization of future cash flows. Methodology for determining the capitalization rate, and use of compound interest tables. Market conditions. Replacement cost, depreciation, and land value. Successful completion of this course meets part of the licensing requirement for real estate broker in Ohio. Prerequisite: FIN 331.

436-3 Seminar in Selected Real Estate Topics
Various topics to be covered depending upon demand and instructor's objectives. Prerequisite: FIN 433, 434, or equivalent, or permission of instructor.

462-3 Retirement and Estate Planning
Designed to provide theoretical and practical approach to retirement and estate planning. Topics covered include pension programs, social security retirement benefits, HR-10 (Keogh) plans, IRAs, tax deferred annuities, federal estate taxes, state death taxes, wills, and the laws of intestacy. Prerequisite: FIN 302, ACC 331; or permission of instructor.

463-3 Seminar in Financial Services
A capstone course for the financial services area of concentration which emphasizes the development and application of a coordinated and systematic approach to financial planning. Extensive use of cases. Completion of financial services requirements or permission of instructor required.
192 Courses/Finance

477-1 to 3 Finance Studies
Independent reading and research in selected areas of finance. Senior standing in finance and permission of department chair required.

478-3 Honors: Independent Study in Finance
Research in finance for fulfillment of the Honors Program project requirement. Permission of department chair required.

481-6 Internship in Finance
One-quarter faculty-supervised internship in finance. The student will work in a firm or public agency, participate in seminars, and submit reports for the completion of the course. Approval of Administrative Sciences and Internship Committee required.

490-3 International Financial Management
Identification of those aspects of financial management altered or complicated by business transactions that transcend national borders; extension of the theory of domestic financial management in order that the added international variables can be explicitly included in the manager's decision parameters; development of analytical skills and perspective necessary to fulfilling the responsibilities of financial management in a multinational setting. Prerequisite: FIN 301, 302.

French/FR

101-4, 102-4, 103-4 First-Year French
Study of the vocabulary and structure of the French language; practice in conversation, reading, and writing. Must be taken in sequence.

111-4 Essentials of French
Introduction to French with an emphasis on speaking the language.

201-4, 202-4 Second-Year French
Grammar review, reading and discussion of selected texts, with practice in speaking and writing the language. Must be taken in sequence. Prerequisite: FR 103 or equivalent.

203-4 Second-Year French
Continuation of FR 202 with an emphasis on speaking and writing the language. Prerequisite: FR 202 or equivalent.

Advanced Courses
FR 202 or equivalent is the minimum prerequisite for all 300-level French courses.

301-4, 302-4 Survey of French Literature
301: Middle Ages, sixteenth, and seventeenth centuries; 302: eighteenth, nineteenth, and twentieth centuries.

321-4, 322-4 French Composition
321: writing techniques and grammar review; 322: explication de texte; oral and written stylistic analyses.

341-4, 342-4 Advanced French Conversation
Practice in oral use of French, emphasizing the culture of the French-speaking world.

351-4 French Civilization
Study of the main currents of French civilization with special emphasis on the development of literary and cultural aspects. Conducted in French.

361-2 French Phonetics
Pronunciation, diction, and intonation. Corrective exercises and laboratory work.

381-1, 382-1, 383-1 Applied Elementary French Instruction
French majors assist elementary course instructors in conducting classes. Enrollment limited to French majors. Permission of instructor required.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of French. Prerequisite: FR 302, 322; or permission of instructor.

403-4 Advanced Studies: Language/Civilization
Variable content. Topic chosen by instructor. Conducted in French. Prerequisite: FR 322, 342; or permission of instructor.

421-4 Literature of the Middle Ages
Les Chansons de Geste; Roland, Guillaume; le roman de Tristan, Chrétien de Troyes; le roman de Renard; theatre; le roman de la Rose. Prerequisite: FR 302, 322; or permission of instructor.

422-4 Villon to Chénier
Three centuries of French poetry: Villon, Scève, Marot, Du Bellay, Ronsard, d'Aubigné, Malherbe, La Fontaine, Boileau, Voltaire, Chénier. Prerequisite: FR 302, 322; or permission of instructor.

423-4 Seventeenth- and Eighteenth-Century Novel
Mme de La Fayette, Scarron, Fénélon, Montesquieu, Lesage, Prévost, Diderot, Laclos. Prerequisite: FR 302, 322; or permission of instructor.

441-4 Libertines and Moralists: From Rabelais to Voltaire
Currents of skepticism and humanism in the intellectual history of French. Major authors: Rabelais, Montaigne, Cyrano de Bergerac, Saint-Evremond, La Bruyère, La Rochefoucauld, Bayle, Fontenelle, Diderot, Voltaire. Prerequisite: FR 302, 322; or permission of instructor.

442-4 Seventeenth- and Eighteenth-Century Theatre
Works of Corneille, Molière, Racine, Marivaux, Diderot, Voltaire, Beaumarchais. Prerequisite: FR 302, 322; or permission of instructor.
443-4 The Enlightenment
History of political and social ideas in eighteenth-century France. Based principally on works of Montesquieu, Diderot, Voltaire, and Rousseau. Prerequisite: FR 302, 322; or permission of instructor.

450-1 to 4 Independent Undergraduate Research
Topics vary from quarter to quarter.

451-4 Romanticism from Rousseau to Hugo
Includes Bernardin de Saint-Pierre, Chateaubriand, Mme de Staël, Diderot, Lamartine, Vigny, Musset, Nerval. Prerequisite: FR 302, 322; or permission of instructor.

452-4 Nineteenth-Century Novel
Chateaubriand, Constant, Stendhal, Balzac, Flaubert, Zola, France. Prerequisite: FR 302, 322; or permission of instructor.

453-4 Poetry from Baudelaire to Breton
Symbolists, Decadents, and Surrealists. Prerequisite: FR 302, 322; or permission of instructor.

454-4 Nineteenth-Century Short Story
Intensive study of such authors as Balzac, Stendhal, Flaubert, Zola, France. Prerequisite: FR 302, 322; or permission of instructor.

462-4, 463-4, 464-4 Twentieth-Century Literature
462: The Novel. 463: Drama. 464: Poetry. Prerequisite: FR 302, 322; or permission of instructor.

465-4 Problems in French Literature
Selected topics in French literature that investigate various themes, myths, genres, literary movements, or characters. May be taken more than once with different subtitles. Prerequisite: FR 302, 322; or permission of instructor.

471-4 Introduction to Historical and Comparative Linguistics
(Listed jointly with Linguistics, see LI 471.)

481-1, 482-4 Independent Reading for Advanced Students
Topics vary from quarter to quarter.

**Geography/GEO**

**Lower Division Courses**

101-4 Introduction to Physical Geography
A study of the elements of man’s natural environment at regional and global scales including examination of the interactions among climate, soils, vegetation, landscapes, and man.

102-4 Introduction to Cultural Geography
A study of the major cultural elements of man’s environment, including examination of their spatial interactions and factors influencing their location and distribution.

103-4 Introduction to Economic Geography
Examination of the principal geographic factors influencing man’s activities related to production, exchange, and consumption of goods and services.

225-4 World Regional Geography
A discussion of the nature of selected world regions and their spatial relationships. Emphasis is given to the unique characteristics of the cultures and landscapes of these regions, applying basic geographic concepts.

230-4 Introduction to Climatology
Observation, measurement, and analysis of climatic elements and controls, climatic classification, and relation of climate to man’s economic and social activities.

242-4 Introduction to Urban Geography
General nontechnical introduction to urban geography, focusing on major geographic concepts and principles relating to location, function, and structure of urban areas.

253-4 Location Theory
A study of theoretical aspects of the location of human activities. Introduction to theories and concepts regarding location and spatial arrangement of economic activities.

261-4 Introduction to Remote Sensing
Basic survey of imaging remote sensor types and their operational characteristics, including sensors for the ultraviolet, visible, infrared, and microwave portions of the electromagnetic spectrum.

262-4 Concepts in Cultural Geography
Examination of the principal traditions and related conceptual structures of contemporary cultural geography. Emphasis on the intellectual and methodological thrusts of ecology, diffusion, landscape, perception, region, and spatial order.

271-4 Conservation of Resources
Economic and geographic appraisal of resource conservation in the world, emphasizing an analytical approach to the solving of such contemporary problems as human population growth, environmental quality, recreation and open space, and resource management.

275-4 Introduction to Urban Planning
Examination of the development of city planning as a professional discipline. Consideration of the contributions to planning by the arts and sciences. Selected activities and functions of contemporary urban planning agencies are viewed from the perspective of current urban problems.
194 Courses/Geography

285-5 Geographic Methodology
Examination of the nature, tools, methods, and techniques of geographic analysis. Emphasis on design, compilation, interpretation, and presentation of research materials. Required of all geography majors before completion of more than five courses in geography at the 300-level or above. Exceptions made with permission of department chair.

Upper Division Courses
302-4 Political Geography
Geographic appraisal of factors influencing evolution, structure, resource base, function, and associations of political units.

303-4 Space and Faith: Topics in Religion and Geography
(Taught jointly with Department of Religion; see REL 303.) The interrelation of religions and geographic factors in selected cultures of East and South Asia. May be repeated with different titles.

322-4 Principles of Geomorphology
Distribution of world's landforms with emphasis on processes and systems functioning to shape the natural landscape. Attention to three-way interaction among landforms, other physical factors, and man.

331-4 Introduction to Meteorology
Development and application of first principles governing the atmosphere at rest and in motion. Examination of the general circulation; applied meteorology. Prerequisite: MTH 131 or permission of instructor.

334-4 Climatology for Earth Science Teachers
Interaction of weather and climate with various earth systems. Includes observation, measurement, and analysis of meteorological elements and controls. Not open to geography majors.

343-4 Concepts in Urban Geography
Examination of selected concepts, generalizations, and research methods of urban geography with emphasis on the spatial structure of residential populations, distribution of social pathologies, and segregation of social groups.

354-4 Geography of Manufacturing
Factors of industrial location utilizing empirical examples. Includes introduction to basic theories and techniques underlying the decision process in manufacturing locations.

360-4 Systematic Geography
Analysis of various geographic factors. Specific topic or field of concentration announced each time course is offered. May be repeated to a maximum of fifteen credit hours.

362-4 Remote Sensing of the Environment
An application of remote sensing techniques to environmental and resource problems. Emphasis on optimizing sensor selection to enhance image information content.

365-5 Cartography
Principles of map projections, their construction, and use in illustrating geographic relationships. Includes methods of design compilation, and graphic representation of data.

370-4 Regional Geography
Physical and cultural analysis of major and minor world regions. Specific topic announced each time course is offered. May be repeated to a maximum of fifteen credit hours.

376-4 Principles of Planning
Includes the role of planning in urban structures, and duties and responsibilities of planning commissions; process of preparing comprehensive plans; population change, the economic base, and employment change; determinants of future urban structure. Prerequisite: GEO 275 or permission of instructor.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of geography.

432-4 Intermediate Climatology
Principles of physical and dynamical climatology. Evaluation of local and regional transports and conversions of energy in the earth-atmosphere system. Prerequisite: GEO 331.

445-4 Intermediate Cartography and Map Interpretation
Study and practice of compilation processes for the development of maps and models utilizing primary data sources. Prerequisite: GEO 365 or permission of instructor.

446-4 Map and Photo Interpretation
Uses of map and photographic data in close and long range photogrammetry. Emphasis given to the full spectrum of photo interpretation as applied to the controlled mapping of terrestrial and marine surfaces. Prerequisite: GEO 445 or permission of instructor.

458-4 Human Perception in Resource Management
Spatial factors influencing human response and decision making in resource-use schema. Study of how man perceives environmental elements and apprehends resources and natural hazards such as floods and droughts.
463-4 Geographic Applications for Remotely Sensed Data
Application of geographic methodology to problems employing photographic and machine-processed multispectral scanner data that are in contemporary use in academic research, environmental analysis, and planning. Prerequisite: GEO 362 or permission of instructor.

466-4 Seminar in Urban Geography
Geographic perspective in the study of cities. Recent developments in theory, method, and techniques in urban geographic research, with emphasis on the behavioral approach. Prerequisite: GEO 343 or permission of instructor.

477-4 The Land Use Plan
The process of preparing comprehensive urban plans. Methods for assessing land use conditions, housing patterns, and urban deterioration. Students expected to participate in the development of a land use plan for selected area. Prerequisite: GEO 376.

478-4 Urban Planning Seminar
Examination of urban plans and planning proposals. Includes future land use plans, community facilities and public utility plans, and traffic and circulation plans. Considers modern theories of planning and the planning and design of new communities.

479-5 Landscape Analysis for Urban Planning
A systematic approach to landscape analysis for urban site planning using basic data sources. Emphasis is on landscape capabilities for satisfying human needs and uses. Requires a one-day field trip. Junior or senior standing required. Prerequisite: GEO 376 or permission of instructor.

481-1 to 4, 482-1 to 4 Special Problems in Geography
Research and problems designed for specific needs and talents of the students. Topics vary from quarter to quarter. Departmental approval required.

484-3 to 4 Biogeography
(Listed jointly with Department of Biological Sciences; see BIO 484.) Introduction to factors affecting the geographical distribution of plants and animals. Students registering for three credit hours attend lectures only; registration for four credit hours requires an additional laboratory section. Prerequisite: GEO 101, 230, or permission of instructor.

492-1 to 6 Geography Internship
An internship providing geography majors fifteen clock hours of practical experience under academic supervision each week during the quarter with a cooperating public agency or private firm. Topics vary from quarter to quarter. May be repeated once. Junior or senior standing and departmental approval required. Enrollment limited to geography majors.

493-4, 494-4 Honors Project in Geography
Provides the geography major of superior academic ability the opportunity to use, broaden, and demonstrate the knowledge and skills acquired. Departmental approval required.

Geological Sciences/GL

101-3 Introductory Geology I
Introduction to physical and chemical processes that have operated to produce the earth, its minerals, rocks, landforms, and economic mineral fuel deposits. Corequisite: GL 104.

102-3 Introductory Geology II

103-4 Topical Concepts in Geology
Lecture: topics of current interest and their relationships to geology. Recitation: demonstrations, discussions, exercises pertinent to the particular topic. 3 hours lecture, 2 hours lab. Recommended preparation: GL 102.

104-1 Introductory Geology I Laboratory
Introduction to the process of crystallization and mineral formation. Rock identification and topographic map interpretation. Folding and faulting of rock strata.

105-1 Introductory Geology II Laboratory
Introduction to geological maps and their interpretation. Fossil identification, paleoenvironmental interpretation, and plate tectonic exercises.

111-4 Introductory Geology Honors
A general discussion of the earth's composition and structure with particular reference to the crust, ocean, and atmosphere and the processes by which they interact. Generally includes one or two short field trips. 3 hours lecture, 2 hours lab.

112-4 Introductory Geology II Honors
A summary of what is believed about the earth's history from the time of its origin to the present. Among the main topics discussed are evolution, climatic changes, and movement of the earth's crust. 3 hours lecture, 2 hours lab.
113-4 **Introductory Geology II Honors**
Study of some geological topics related to human life and activities. Attention is divided equally between natural systems in which man has an interest, natural resources, and geologic hazards. Generally includes a field trip. 3 hours lecture, 2 hours lab.

151-3 **Physical Geology**
Comprehensive treatment of the geological processes which affect the origin, form, and structure of the earth and its internal and external features and the physical and chemical factors which direct these processes. Offered annually.

152-3 **Historical Geology**
History of the earth, including geologic history of all of earth's continents. Review of origin of earth, development of the rock record, evolution of diverse life forms to produce a biological and physical history of the earth. Recommended preparation: GL 151.

154-1 **Physical Geology Laboratory**
Introduction to minerals and rocks, landforms, and external processes. Optional field trip. Should be taken concurrently with GL 151.

155-1 **Historical Geology Laboratory**
Introduction to the fossil record, stratigraphic correlation, and the interpretation of simple geologic maps. Should be taken concurrently with GL 152.

199-1 to 4 **Directed Studies**
Research and problems related to specific needs and talents of students. Permission of instructor required.

GL 102 or 152 is recommended preparation for the following courses in addition to the listed prerequisites.

201-4 **Water Resources**
Hydrologic cycle; emphasizes past, present, future problems in flood control, water pollution, water resource development. 3 hours lecture, 2 hours lab or field trip.

203-4.5 **Minerals and Rocks**
Structure, symmetry, composition of minerals. Composition, classification, origin of rocks. Lab emphasizes mineral and rock identifications. 3 hours lecture, 3 hours lab. Offered annually.

204-3 **Earth Resources and the Environment**
Effects of exploitation of earth resources on the environment; effects of population and urban growth on vanishing assets. Location and conservation of earth resources in relation to urban expansion.

205-3 **Urban Geology**
Study of the effect of geology on the historical development of cities. Use of geological reasoning in city and regional planning stressed. For students with no background in geology.

234-4 **Geology of the Smoky Mountains Area**
Geological development of the Smoky Mountains area studied through lecture, examination of literature, and direct observation in the field. Emphasis on geologic processes that developed the present landscape and geologic history.

### Advanced Courses

**301-6 Crystallography and Optics**
Introduction to symmetry of crystals and crystal optics. Determination of optical constants of crystals by polarizing microscope. 3 hours lecture, 6 hours lab. Sophomore standing recommended. Recommended preparation: GL 102, CHM 141. Offered annually.

**302-4 Earth Resources in World Affairs**
Brief survey of geologic and geographic distribution of earth resources. Investigations and discussions into stimulus of the erratic distribution of earth resources in world history. 3 hours lecture, 2 hours lab. Permission of instructor required.

**305-4 Mineral Deposits**
Genesis, classification, and description of economic mineral deposits exclusive of petroleum deposits. Role of economic deposits in world affairs. 3 hours lecture, 2 hours lab. For nongeology majors.

**309-4 Environmental Geology**
Impact and interrelationship of geological processes on the quality of life and the works of man. 3 hours lecture, 2 hours lab or field trip.

**311-4.5 Introduction to Structural Geology**
Concepts of stress, strain, and material behavior used to describe and explain how rocks deform. Depositional structures. 3 hours lecture, 3 hours lab. Offered annually.

**312-4 Advanced Structural Geology**
Development of theory of rock behavior. Finite strain and gravity tectonics. 3 hours lecture, 2 hours lab. Recommended preparation: GL 311.

**320-4 Earth Systems**
Core curriculum course for geology majors dealing with physical and chemical composition and features of the earth as a planet. 3 hours lecture, 2 hours lab. Recommended preparation: MTH 133.

**321-4 Evolution of the Earth**
Core curriculum course stressing the evolution of the earth and its major features through geologic time. 3 hours lecture, 2 hours lab. Recommended preparation: GL 320.
322-4 The Earth and Man
Core curriculum course emphasizing and relating subdisciplines and areas of geologic application. 3 hours lecture, 2 hours lab. Recommended preparation: GL 321.

330-4.5 Paleontology I
Morphology, geologic record, and geographic distribution of major invertebrate groups characterized by significant fossil representation. 3 hours lecture, 3 hours lab. Recommended preparation: GL 102. Offered annually.

331-4.5 Paleontology II
Morphology, geologic record, and geographic distribution of major vertebrate and plant groups characterized by significant fossil representation. 3 hours lecture, 3 hours lab. Offered annually.

333-4.5 Stratigraphy
Principles, rules, and techniques of correlation. Relationships between surface and subsurface correlation. Geologic and geophysical correlation techniques. 3 hours lecture, 3 hours lab. Offered annually.

365-3 Regional Geomorphology
The distribution, position, and surface form of geologic regions of the United States; a study of the geologic structure that underlies them and the erosional processes that have modified their surface expressions. Advanced standing required. Prerequisite: GL 203.

399-1 to 6 Special Problems
Research problems for specific needs and talents of the student. Topics vary from quarter to quarter. Junior standing required.

400-3 Introduction to Solid Earth Physics
The basics of seismic, gravimetric, magnetic, and heat conduction principles as used to determine the geophysical properties of solid earth. Emphasis is on the deeper parts of the crust, the mantle, and the core. Junior standing required. Prerequisite: MTH 132.

403-2 Geologic Literature and Research Methods
Introduction to literature sources in the geologic sciences. Critical analysis of material in the literature. Research paper required.

410-6 Mineralogy
Lecture: chemistry and physics of minerals. Lab: identification of minerals by microscopic, macroscopic, and x-ray techniques. 3 hours lecture, 6 hours lab. Recommended preparation: GL 301. Offered annually.

412-6 Petrology
Origin of igneous, metamorphic, and sedimentary rocks. Lab: use of thin sections for mineral identification, microscopic structures, and rock classifications. 3 hours lecture, 6 hours lab. Recommended preparation: GL 410. Offered annually.

413-5 Geochemistry
Principles governing distribution of elements within the earth. Introduction to geochemical research methods. 3 hours lecture, 4 hours lab. Recommended preparation: CHM 141.

415-4 Metamorphic Petrology
Lecture: petrographic and chemical changes that take place during metamorphism of different rock types. Lab: rock analysis using petrographic microscope. 3 hours lecture, 2 hours lab. Recommended preparation: GL 412.

416-4.5 X-Ray Techniques
Generation, spectrum, and absorption of X rays. Diffraction of X rays on crystals. Identification of crystals using powder cell dimensions of crystals. Solid solutions. 3 hours lecture, 3 hours lab. Senior or graduate standing or permission of instructor recommended.

417-3 Theoretical Hydrology
Introduction to mathematical and physical concepts on hydrology; equations of flow of groundwater; mathematical modeling of boundary value problems in hydrology; steady state and unsteady state behavior. Hydrologic problems to be modeled selected on basis of students’ backgrounds and areas of interest. Permission of instructor recommended. Recommended preparation: MTH 333.

418-4.5, 419-4.5 Igneous Petrology
Occurrence, chemical and geological features, and genesis of selected families of volcanic rocks. 418 lab: Microscopic study of volcanic rock suites. 419 lab: microscopic study of plutonic rock suites. 3 hours lecture, 3 hours lab. Recommended preparation: GL 412.

420-3 Tectonics
Existence of large-scale tectonic features as demonstrated by current geophysical measurements; their geologic interpretation. Permission of instructor recommended. Prerequisite: GL 311.

421-3 Resource Laws and Management Principles
Fundamental principles of managing natural resources; environmental law; role of the geologist as an expert witness in policy making; watershed and air resources control; resources bidding, leasing, and taxation; resource valuation; court cases.

422-5 Introduction to Geophysical Prospecting
(Listed jointly with Department of Physics; see PHY 422.) Introduction to principles of the gravity, magnetic, seismic, electrical, and radioactive prospecting. 3 hours lecture, 4 hours lab. Junior standing or permission of instructor required. Prerequisite: MTH 132 or permission of instructor. Offered annually.
423-4 Seismic Exploration
Study of the theory, observation, and analysis of seismic phenomena as applied to geologic exploration. 3 hours lecture, 2 hours lab.
Prerequisite: GL 422 or permission of instructor.
Offered annually.

424-4 Gravity Exploration
Study of the theory, observation, and analysis of gravitational phenomena as applied to geologic exploration. 3 hours lecture, 2 hours lab.
Prerequisite: GL 422 or permission of instructor.
Offered annually.

425-5 Topical Concepts in Geophysics
Special topics in geophysics. 3 hours lecture, 2 hours lab. Prerequisite: GL 400 or 422 or permission of instructor.

426-1 Geophysics Seminar
Literature survey and student presentations on selected topics in geophysics. May be repeated. Prerequisite: GL 400 or 422. Offered annually.

427-4 Regional Structural Synthesis
The synthesis of diverse structural, geophysical, and remote sensing data and their application to regional tectonic interpretation and natural resource evaluation. Prerequisite: GL 311/511, 312/643.

428-0.5 Geology Seminar
Selected geological topics discussed by students, guest speakers, and faculty.

429-4 Sedimentology
Clastic rocks, their mineralogy, texture, provenance, and classification. Nonclastic carbonates and other nonclastic rocks. Depositional environments; sedimentary structures. 3 hours lecture, 2 hours lab.
Recommended preparation: GL 203, 410. Offered annually.

430-4 Photogeology
Includes the use of aerial photographs in the interpretation of lithology, stratigraphy, and structures. The use and advantages of photoanalysis are covered. Junior standing or permission of instructor required. Prerequisite: GL 102.

432-4.5 Carbonate Petrology
The character, composition, origin, and diagenesis of carbonate rocks are examined, utilizing ancient and modern examples. 3 hours lecture, 3 hours lab. Recommended preparation: GL 301.

434-9 Field Geology
Geologic phenomena illustrated in the field. Introduction of mapping techniques and application of many geological disciplines to geologic analysis. Recommended preparation: GL 311 or permission of instructor. Offered annually.

435-4 Paleoeology
Interpretation of environments of the geologic past based on physical, chemical, and biological characteristics of deposits. Emphasis on recent analogues of past environments. 3 hours lecture, 2 hours lab. Recommended preparation: GL 430 or permission of instructor.

436-4.5 Biogeochemistry
Effects of organisms in geochemical cycles; concentration and dispersion of elements on the earth's surface. Individual laboratory research projects. 3 hours lecture, 3 hours lab. Recommended preparation: GL 413, BIO 113 or 114.

437-4 Seismic Data Processing
Digital filtering, deconvolution, and migration of seismic data. Prerequisite: GL 423.

439-1 Seminar in Economic Geology
Allows students who have been introduced to the principles of economic geology in GL 440 to pursue the subject further and to study selected topics in detail. Prerequisite: GL 440.

440-3 Economic Geology
Genesis, classification, and description of economic metal-bearing mineral deposits. Recommended preparation: GL 412 or 413.

444-4 Formation Analysis
The theory, application, and interpretation of geophysical logs with emphasis on their use in correlation and determination of porosity, permeability, and fluid content of subsurface formations. 3 hours lecture, 2 hours lab. Senior standing or permission of instructor required.

445-4 Geology of Earth Energy Resources
The geology of natural energy sources with emphasis on fossil fuels, especially petroleum and gas, but including geothermal energy and radioactive ore deposits. Explores geological and geographic distribution, genesis, exploration, production, governmental controls, and economic concerns. 3 hours lecture, 2 hours lab. Senior standing or permission of instructor required.

448-4 Sedimentary Geochemistry
The origin of sedimentary materials resulting from chemical processes. The structures of minerals in sedimentary materials (carbonates, clays) and their changes, with emphasis on properties and identification. 3 hours lecture, 2 hours lab. Prerequisite: GL 429.

449-3 Evolution of Sedimentary Rocks
A quantitative study of the sedimentary rock mass and the fluxes that supply and deplete it, and a review of mathematical models describing the sedimentary cycle. Prerequisite: GL 429.
451-3 Regional Hydrology
Survey of hydrology covering the hydrologic cycle and budget precipitation, water losses, runoff, the drainage basin, the principles of statistical data analysis. Analysis of physical properties of waterbearing materials, groundwater movement, elementary well hydraulics, and the groundwater basin. 3 hours lecture, 3 hours lab. Recommended preparation: MTH 133. Offered annually.

456-3 Engineering Geology I
Principles of engineering geology; application of geologic principles to engineering works. Impact and interrelationship of geologic processes on man’s construction efforts. 3 hours lecture, 3 hours lab. Offered annually.

457-4.5 Engineering Geology II
Engineering geology case studies. Review of classic and unusual engineering geology projects chosen from both published and unpublished sources to illustrate principles, problems, and solutions. 3 hours lecture, 3 hours lab. Offered annually.

463-4 Geologic Applications of Remote Sensing
Familiarizes geology students with and trains them in the applications of remote sensors to general field geology and more explicitly to exploration (mineral and petroleum) geology. Emphasis is on the end product of the remote sensor. Recommended preparation: introductory geology sequence.

470-4.5 Advanced Crystallography
Symmetry of crystals, plane groups, and space groups. Single crystal diffraction methods used to study symmetry and lattice of crystals. 3 hours lecture, 3 hours lab. Senior or graduate standing and permission of instructor recommended.

471-4.5 Crystal Structure Analysis I
Theoretical and practical aspects of methods used to determine arrangement of atoms in crystals. 3 hours lecture, 3 hours lab. Recommended preparation: GL 470 or 670 or permission of instructor.

472-4.5 Crystal Structure Analysis II
Advanced crystal structure analysis. Partially disordered crystals. 3 hours lecture, 3 hours lab. Recommended preparation: GL 471 or 671 or permission of instructor.

473-4.5 Crystal Structure Imperfections
Imperfections in crystals; their study using microscopy and diffraction. Effect of imperfections on transformations in solids. 3 hours lecture, 3 hours lab. Recommended preparation: GL 470 or 471 or permission of instructor.

474-3 X-Ray Spectral Analysis
(Listed jointly with School of Engineering: see EGR 478.) Electron microprobe and x-ray fluorescence for analysis of rocks, minerals, and other substances explained and demonstrated on examples.

495-3 Geochemical Prospecting
Theory, techniques, and application of geochemistry to the exploration for economic mineral deposits including hydrocarbons.

498-3 Regional Geology
Literature on the geology of a region is studied in seminars during the quarter. Between terms specific areas of the region are visited and examined on a field trip. May be repeated. Advanced standing required.

499-1 to 6 Special Problems
Research problems for specific needs and talents of the student. May be taken for letter grade or pass/unsatisfactory at option of department. Senior standing required.

German/GER

101-4, 102-4, 103-4 First-Year German
Study of the vocabulary and structure of the German language; practice in conversation, reading, and writing. Must be taken in sequence.

111-4 Essentials of German
Introduction to German with an emphasis on speaking the language.

115-4 German for Reading Knowledge
For students interested in acquiring a reading knowledge of German. Introduction to all main points of grammar; practice in recognizing grammatical constructions and using a dictionary; selected readings of adult-level texts from various fields. May be taken for letter grade or pass/unsatisfactory.

201-4, 202-4 Second-Year German
Grammar review, reading and discussion of selected texts, with practice speaking and writing the language. Must be taken in sequence. Prerequisite: GER 103 or equivalent.

203-4 Second-Year German
Continuation of GER 202 with an emphasis on speaking and writing the language. Prerequisite: GER 202 or equivalent.

215-4 Scientific German
Intensive reading in all areas of expository and technical German. Prerequisite: GER 102 or equivalent.
Advanced Courses

301-4, 302-4 Survey of German Literature
Historical survey of German literature from its beginning to the present. 301: literature of the Middle Ages, Renaissance, Reformation, Enlightenment, Storm and Stress. 302: Classicism, Romanticism, Poetic Realism. Modern Period. Prerequisite: GER 202 or equivalent.

321-4, 322-4 German Composition
Oral and written composition in German; translations from English into German. Further grammar study. Prerequisite: GER 202 or equivalent.

341-4, 342-4 German Conversation
Emphasis on the culture of the German-speaking world. Prerequisite: GER 202 or equivalent.

GER 302 and 322 or permission of instructor are prerequisites for the following advanced courses:

351-4 German Culture and Civilization
Survey of cultural influences and of political, social, economic, religious, educational, and cultural institutions.

361-4 Introduction to Germanic Folklore
A survey of Germanic folklore as it relates to literature.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of German.

403-4 Advanced Studies: Language/Civilization
Variable content. Topic chosen by instructor. Conducted in German. Prerequisite: GER 342 or permission of instructor.

405-4 Early German Literature
German literature from the earliest times to the Reformation.

406-4 Renaissance and Reformation
Representative German authors of the period.

410-4 Baroque
Representative German authors of the period.

415-4, 416-4 German Literature of the Eighteenth Century
415: representative authors in Rococo, Enlightenment, Storm and Stress. 416: representative works of Goethe and Schiller.

417-4 German Romanticism
Study of the romantic movement with representative works of Schlegel, Novalis, Wackenroder, Tieck, Eichendorff, Hoffmann, and others.

418-4 Goethe’s Faust
Intensive study of Faust I and Faust II.

425-4, 426-4, 427-4 German Literature of the Nineteenth Century

431-4, 432-4, 433-4 German Literature of the Twentieth Century
Readings and reports in twentieth-century literature. 431: prose. Representative works of Hesse, Mann, Kafka, and others. 432: drama. Representative works of Schnitzler, Hofmannsthal, Kaiser, Toller, Brecht, and others. 433: poetry. Representative works of Rilke, George, Trakl, Benn, and others.

434-4 Thomas Mann
Studies of the writings of Thomas Mann.

442-4 History of the German Language

450-1 to 4 Undergraduate Research in German
Topics vary from quarter to quarter.

471-4 Linguistics
(Listed jointly with Linguistics: see LI 471.)

481-4, 482-4 Independent Reading for Advanced Students
Topics vary from quarter to quarter.

Greek/GR

Students who have studied Greek elsewhere should consult the Department of Classics for appropriate course level. Placement and proficiency tests can be given.

101-4, 102-4, 103-4 Beginning Greek
Essentials of the Greek language. Must be taken in sequence.

201-4, 202-4 Intermediate Greek
Review of essentials and reading for comprehension in selected authors. Must be taken in sequence. Prerequisite: GR 103 or equivalent.

Reading Courses

The following courses offer a variety of authors and topics; they may be repeated for credit by number, although not by content. Students should consult the department for the scheduled subjects and authors.

351-4 Readings in Greek Drama
Aeschylus, Sophocles, Euripides, Aristophanes, Menander. Study of at least one play in Greek. Topics for investigation include origin and development of tragedy, drama as a reflection of contemporary events, development of New Comedy.
Health, Physical Education, and Recreation/Courses

353-4 Readings in Greek Poetry
Greek epic and lyric poetry. epics of Homer and Hesiod, the Homeric Hymns, the early lyric poets such as Archilochus and Sappho, the Hellenistic poets. Topics for investigation include structure and technique of oral epic, the didactic tradition, lyric meters and diction, the development of pastoral poetry.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of Greek.

451-4 Readings in Greek Philosophy
Plato, Aristotle, Epicurus, Epictetus, Marcus Aurelius. Topics for investigation include pre-Socratics and the development of philosophical vocabulary, the sophist movement, the Cynic tradition, the development of popular philosophy.

453-4 Readings in Greek History
Herodotus, Thucydides, Xenophon, Polybius, Plutarch. Topics for investigation include methods of composition, influences on historiography from the sophists and philosophers, the development of Greek historical writing, supplemental evidence from inscriptions and nonliterary sources.

455-4 Readings in Greek Politics and Political Theory
Lysias, Demosthenes, Isocrates, Old Oligarch, Plato, Xenophon, Aristotle. Topics for investigation include development of political ideas and vocabulary, nonliterary sources for our knowledge of Greek civil life, influences on Roman theories and practices.

481-1 to 4 Independent Reading
Restricted to senior candidates for departmental honors.

103-3 Life Saving
Knowledge and skills for safety in and on the water; assisting or rescuing a person in danger of drowning. Red Cross Senior Life Saving Test administered. Competency-based approach. Students should check competency levels posted in Physical Education Building before enrolling. Prerequisite: HPR 101 or equivalent or permission of instructor.

104-3 Aquatic Supervisor
Advanced life-saving skills and pool supervision techniques. WSI certification awarded when course is completed. Competency-based approach. Students should check competency levels posted in Physical Education Building before enrolling. Prerequisite: HPR 103 or equivalent competency.

105-2 Physical Education for the Disabled Student
Recreational and sport activities for the physically limited student. Course may be repeated for credit. Open to physically limited students. Medical referral form and appointment with instructor required.

106-3 Skin and SCUBA Diving—Openwater
Classroom, pool, and openwater instruction fulfilling all requirements for national certification. Course qualifies the diver to safely and enjoyably pursue all activities involved in sport diving. 2 hours lecture, 2 hours lab. Prerequisite: HPR 100 (Beginning Swimming).

107-3 Skin and SCUBA Diving—Experienced Openwater
Classroom and supervised openwater sessions designed to provide a variety of unique openwater experiences and increase appreciation for the aquatic environment. National diver certification and permission of instructor required. Prerequisite: HPR 106.

108-3 Skin and SCUBA Diving—Advanced Openwater
Provides advanced theory and a wide variety of experiences including ocean diving, Great Lakes diving, and CPR certification. 2 hours lecture, 2 hours lab, and openwater dives. National diver certification and permission of instructor required. Prerequisite: HPR 107.

151-4 Total Fitness Lifestyle
Assessment, prescription, participation, and reassessment of fitness variables, including cardiovascular fitness, strength, body composition, and body composition determination, and graded exercise testing.

170-3 Principles of Physical Fitness
Instruction concerning principles of physical fitness, including aerobic fitness, muscular fitness, and evaluation of current concepts regarding diet and exercise. Demonstrations of measuring aerobic and muscular fitness, body composition determination, and graded exercise testing.
202 Courses for Health, Physical Education, and Recreation

211-3 Sensory-Motor Skills of Young Children
An examination of sensory-motor skills that are used to manage information coming to the individual through the senses. Twenty-two skills are defined and illustrated.

212-3 Adapted Physical Education and Recreation
Physical and psychological considerations and problems in adapting physical activities to individual needs of handicapped persons; standard classifications; exercises and adaptations appropriate for each classification. (Previously listed as HPR 200.)

213-3 Teaching Adapted Aquatics
Red Cross certification course in adapted aquatics. Concepts are given regarding teaching techniques, disabilities, and basic rescues specific to the population involved. Lab experience required. Prerequisite: HPR 100. (Previously listed as HPR 111.)

214-3 Athletics for Exceptional Populations
Rules and certification requirements of the various athletic opportunities for exceptional populations. Includes discussions of adaptive devices and special facilities used for these programs. Prerequisite: HPR 212. (Previously listed as HPR 201.)

220-3 Fundamental Movement
Examination of the basic content areas of physical education for grades K-6. Includes motor activities that aid the elementary age child in developing fundamental movements. Students must demonstrate their cognitive and psychomotor abilities. (Previously listed as HPR 233.)

221-3 Motor Development
The influences of growth and development on movement learning and performance. Implications for the teaching of physical education stressed. Sophomore standing required. (Previously listed as HPR 250.)

230-4 Personal Health
Discussions of personal health problems including basis for mental health, maintenance of health and selection of health services, physical fitness, nutrition, quackery, industrial and home safety, and health of the preschool child.

240-2 Problems in Health Education
Discussions of the student’s problems, with individualized assignments. Course content designed by the students enrolled. Participation experiences expected during enrollment in course. Enrollment limited to health education minors. Prerequisite: HPR 230, BIO 301.

241-3 Introduction to Health, Physical Education, and Recreation
Nature and scope of health, physical education, and recreation from past to present, with emphasis on the present and future. Field experience required.

242-2 Problems in Health, Physical Education, and Recreation
This course covers current issues in health, physical education, and recreation. Students work on individual problems related to the health, physical education, and recreation program at Wright State. May be taken for letter grade or pass/unsatisfactory. Prerequisite: HPR 241.

260-3 First Aid
A comprehensive study of first aid techniques and procedures in emergency treatment. 2 hours lecture, 2 hours lab.

261-4 Athletic Training I
An introductory course to the field of athletic training. Field experience required. 3 hours lecture, 2 hours lab. Course may not be taken concurrently with HPR 384. Prerequisite: HPR 260.

281-3 Physical Education for the Elementary School
Curriculum and materials for elementary school physical education; emphasis on objectives, evaluation, planning, resources and facilities, and curricular trends. Required of all students preparing to teach in the elementary school.

284-3 to 15 Practicum in Health, Physical Education, and Recreation
Supervised field work for sophomore students who are seeking certification or a concentration in a specific area (subtitles to indicate specific area). Contact hours vary according to subject. May be taken for letter grade or pass/unsatisfactory. May be repeated as required. Sophomore standing and permission of instructor required.

303-3 Therapeutic Exercise
Methods of evaluating students and design of individual exercise programs for students with temporary or permanent physical limitations. Prerequisite: ANT 202; for special education majors only, BIO 301.

310-4 Developmental Activities for Children
Movement activities that will aid the awkward child in developing sensory and motor skills. Equipment and materials necessary to provide appropriate movement activities.

311-3 Sensory-Motor Development: An Interdisciplinary Approach
Sensory-motor development of children as it relates to various academic disciplines: reading, writing, art, music, adapted physical education, special education, and dance.

330-4 Community Health
In-depth treatment of public health problems, including study of agencies, diseases, food inspection, safety, and ecology.
331-4 Health and First Aid for the Classroom Teacher
Discussions of health-related issues for elementary school age children, and a comprehensive study of first aid techniques and procedures in emergency treatment for the elementary classroom teacher.

340-3 Organization and Administration of Health, Physical Education, Recreation, and Athletic Programs
Organizational techniques, administrative procedures, and principles of managing school health education, physical education, recreation, and athletic programs. This includes scheduling, facilities, personnel, programs of instruction, and public relations. Prerequisite: HPR 241.

341-3 Aquatic Program Development
The development of aquatic shows and demonstrations to include water ballet, water shows, synchronized swimming, and other aquatic extravaganzas. Prerequisite: HPR 100 (Beginning Synchronized Swimming).

350-4 Kinesiology
Analysis of muscular interrelationships in basic body movements; analysis of principles of mechanics as they relate to fundamental and complex motor skills in physical education activities. Prerequisite: ANT 202.

351-4 Exercise Physiology
Physiological adjustments and changes occurring in the human organism as a result of physical activity. Physiology of muscular contraction and role of circulatory and respiratory systems in exercise. 3 hours lecture. 2 hours lab. Prerequisite: PHS 218.

353-3 Video Analysis in Sport
Designed to explore the use of video technology in the analysis of sport movements and game strategies. Prerequisite: HPR 350. ED 327.

354-3 Psychology of Coaching
Study of the role of psychology in the total athletic spectrum. Prerequisite: ED 215.

355-4 Facts and Theories of Physical Conditioning
Study of past and present theories of physical conditioning, including methods of development and implementation for the physical educator, coach, and athletic trainer. Prerequisite: HPR 351.

380-2 Health Instruction
Theory and application of health instruction, including materials, curriculum development, and discussions of a variety of teaching methods. Prerequisite: HPR 230, 330; ED 211 through 217.

381-3 Methods of Teaching Individual Sports
This course covers a variety of teaching techniques to be utilized when teaching individual sports. Junior standing required. Prerequisite: HPR 242.

382-3 Methods of Teaching Health and Physical Education
Theory and application of health and physical education instruction, including materials, curriculum development, and discussion of a variety of teaching methods. Prerequisite: HPR 242; ED 211 through 217.

383-3 Methods of Teaching Outdoor Activities
This course is designed to provide knowledge and practical application of teaching and leading outdoor activities relating to the field of physical education and recreation. Prerequisite: ED 211 through 217.

384-3 to 5 Practicum in Health, Physical Education, and Recreation
Supervised field work for junior students seeking certification or a concentration in a specific area (topics to indicate specific area). Contact hours vary according to subject. May be taken for letter grade or pass/unsatisfactory. May be repeated as required. Junior standing and permission of instructor required.

410-4 Sensory-Motor Assessment
Techniques of assessing the sensory-motor abilities of awkward children. Prerequisite: HPR 211.

419-5 to 15 School Nursing Practicum
Supervised experiences in the public school. Restricted to those working toward certification in school health nursing. Prerequisite: HPR 440.

430-1 to 3 Coaching Theory
The theory, skills, strategies, and organization principles of coaching a particular sport. Typical sports covered include baseball, basketball, football, soccer, swimming, track and field, tennis, and volleyball. Junior or senior standing required. Prerequisite: HPR 101 in same sport.

435-1 to 3 Officiating
A study of the rules and techniques of officiating a particular sport. Typical sports covered include baseball, basketball, football, soccer, and volleyball. Junior or senior standing required. Prerequisite: HPR 101 in same sport.

440-3 School Health Services
Study of health services provided by our public schools; techniques for increasing student knowledge of healthful practices. Junior or senior standing required.

450-4 Motor Learning
Relationship of psychology to motor skill learning; application to teaching stressed. 3 hours lecture, 2 hours lab. Prerequisite: ED 211 through 217.
Courses/Health, Physical Education, and Recreation

204  Measurement and Evaluation in Physical Education
Nature and purpose of measurement in physical education. Evaluation of available tests; practice in administration of pertinent test. 1 hour lecture, 2 hours lab. Prerequisite: HPR 241. (Previously listed as HPR 480.)

455-4  Athletic Training II
Advanced problems found in the identification of injuries related to athletic participation. Prerequisite: HPR 261, 384.

460-3  Research Methods in Physical Education
Introduction to basic research procedures in health, physical education, and recreation which includes a review of the statistical procedures pertinent to physical education; the format for thesis writing is also discussed. Prerequisite: HPR 242, 455.

481-3  Practicum in Health, Physical Education, and Recreation
Supervised field work for senior students seeking certification or a concentration in a specific area (subtitles to indicate specific area). Contact hours vary according to subject. May be taken for letter grade or pass/unsatisfactory. May be repeated as required. Senior standing and permission of instructor required.

484-3 to 15  Independent Study
Independent reading, writing, and/or reporting in areas related to health, physical education, or recreation. Topics vary from quarter to quarter. Senior standing and approval of program coordinator and instructor required.

489-1 to 6  Workshop in Health, Physical Education, and Recreation
An intensive study of content, curriculum, method, or materials (subtitles to indicate specific area) designed to meet the needs of preservice and inservice professionals in health, physical education, and recreation. Permission of instructor required.

History/HST

Lower Division Courses

111-4, 112-4  American Civilization
Thematic survey of events, forces, groups, and individuals that contributed to and helped to shape an American civilization on the North American continent. 111: colonial foundations to 1877. 112: 1877 to the present.

120-4  The Ancient and Medieval Worlds
Synthetic treatment of the tripartite Judaic, Graeco-Roman, and Christian contributions to Western civilization. (Previously listed as HST 220.)

121-4, 122-4  European Civilization
Western culture from beginning of modern times to present; emphasis on art, literature, philosophy, institutions, cultural and intellectual movements, ideas, men, and forces. 121: 1450 to 1815. 122: since 1815.

131-4, 132-4  Asian Civilization
Cultural styles, political institutions, and historical highlights of India, China, and Japan. 131: traditional background. 132: modern transformation.

142-4, 143-4  Latin America
Evolution of Latin American nations from colonies to republics, with emphasis on intellectual, cultural, institutional, social, political, and economic history. 142: conquest to mid-nineteenth century. 143: mid-nineteenth century to present, with emphasis on twentieth-century revolutions.

199-1 to 4  Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of history. May be repeated as often as topics vary.

214-4, 215-4  The Afro-American in United States History
Survey of black people in American society from colonial slave trade to the present. 214: African roots to the Civil War. 215: Reconstruction to the present.

216-4  Introduction to Urban History: Sumeria to Suburbia
Urban history in its broadest sense from the ancient world to the present, providing historical perspective to the contemporary urban-metropolitan phenomenon and exploring "how" and "why" urban civilization came to be.

218-4, 219-4  History of Ohio: Frontier to Factory
French, British, American, and Indian conflict for control of Ohio; movement to statehood; evolution of political, economic, and cultural life from rural setting to industrialization and urbanization. 218: prehistory to 1871. 219: since 1871.

224-4, 225-4  The American Frontier
The Westward movement, emphasizing life, thought, technical adaptations, clash of cultures, conflict of empires, and impact of the West. 224: the Atlantic to the Mississippi. 225: the Mississippi to the Pacific.

Upper Division Courses

No prerequisites except as noted in course descriptions.

300-4  What Historians Do
Introduction to methods historians use to understand and interpret the past. Required of history majors.
318-4 Modern Japan
Focuses on the phenomenal success of Japan's modernization since the imperial restoration in 1868, Japanese expansionism and imperialism, and Japan's power as an example for non-Western areas embarking on modernization.

321-4, 322-4 History of England
321: Romans through the Stuarts; from the beginning to 1714. 322: from Hanoverians to the present.

327-4 History of Russia
Russia from the beginnings to 1855, through Nicholas I. A survey of the political, social, economic, and cultural history of Russia from the beginnings to the eve of the Great Reforms. (Previously listed as HST 427.)

328-4 History of Russia
Russia: reforms, reaction, revolution, Bolshevism. A survey of Russia since 1855, from the period of the Great Reforms to the Brezhnev regime covering politics, diplomacy, revolutions, and the Soviet regime. (Previously listed as HST 428.)

331-4, 332-4 History of Canada
Challenges and survival. 331: colony to nation, 1497-1867. 332: problems of Canadian nationalism, 1867 to present.

361-4 War in the Western World
Evolution of warfare from 1789 to the present, emphasizing the influence of war and the military on the development of Western history.

390-4, 391-4, 392-4 Medieval Western Europe
From the decline of the Western Roman Empire to ca. 1300. Primary emphasis on Italy, Germany, and France. 390: 285 to 814. 391: to 1100. 392: to 1300. Offered alternate years.

393-4 Ancient Near East
Politics and cultures of Mesopotamia, Egypt, Palestine, Syria to ca. 525 B.C. Offered alternate years.

394-4, 395-4 History of Greece
Minoan civilization, archaic and Hellenic Greece, and monarchies of the Hellenistic period, with stress on cultural history. 394: to 404 B.C. 395. 404 to 146 B.C. Offered alternate years.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of history.

400-4 to 12 History Honors Project
Honors project, which may range from library research to field training. Approval of department curriculum committee and supervising professor required. Prerequisite: HST 300.

405-4 Ancient History
Courses offered under this number examine selected problems in Roman history to the death of Constantine in A.D. 337. See quarterly class schedule for specific topic and prerequisite.

415-4 Early Modern European History
Courses offered under this number examine selected problems in European history from the decline of the Roman Empire through the Renaissance and Reformation. Several of the courses offered under this number are listed jointly with the Department of Religion. See quarterly class schedule for specific topic and prerequisite.

425-4 Modern European History
Courses offered under this number examine modern Europe from the Enlightenment to the present through a national (e.g., Germany), chronological (e.g., eighteenth century), or topical (e.g., Socialism) approach. See quarterly class schedule for specific topic and prerequisite.

435-4 British History
Courses offered under this number examine particular periods of British history (e.g., modern Britain) or topics (e.g., British Constitutional history). See quarterly class schedule for specific topic and prerequisite.

445-4 Middle Eastern History
Courses offered under this number examine the Balkans and the Middle East from the Middle Ages to the present. Topics may include Byzantine history, the Crusades, and the Middle East today. Several of these courses are offered jointly with the Department of Political Science and Urban Affairs. See quarterly class schedule for specific topic and prerequisite.

455-4 Latin American History
Courses offered under this number examine selected Latin American nations (e.g., Mexico), particular topics (e.g., the Age of Dictators), and regions of current historical interest (e.g., Central America). See quarterly class schedule for specific topic and prerequisite.

465-4 Far Eastern History
Courses offered under this number examine various periods of Chinese history and the modern histories of other Asian nations (e.g., India), or regions (e.g., Southeast Asia). See quarterly class schedule for specific topic and prerequisite.

470-4 Colonial American History
Courses offered under this number examine the colonial, Revolutionary, and early national periods of American history, and topics such as Puritanism or the origins of early American political thought. See quarterly class schedule for specific topic and prerequisite.
475-4 Nineteenth-Century United States History
Courses offered under this number examine distinct periods in the nineteenth century (e.g., Civil War and Reconstruction), and major topics such as slavery. See quarterly class schedule for specific topic and prerequisite.

480-4 Twentieth-Century United States History
Courses offered under this number examine particular stages of the twentieth-century American experience (e.g., the Progressive era), or selected topics (e.g., the civil rights movement). See quarterly class schedule for specific topic and prerequisite.

485-4 Special Topics in United States History
Courses offered under this number allow intensive analysis of topics drawn from the entire range of the American experience, such as religion, diplomacy, women, immigration, and urbanization. Several of these courses are offered jointly with the Department of Religion. See quarterly class schedule for specific topic and prerequisite.

491-1 to 4 Independent Readings
Faculty-directed readings in field of student's choice. Course usually requires reports and conferences with instructor. Permission of instructor and department chair required.

495-4 Comparative History
Courses offered under this number compare developments or movements in different parts of the world and/or different times in history, such as revolutions, slave systems, religious movements, or other human experiences that transcend a particular time or place. See quarterly class schedule for specific topic and prerequisite.

498-4 Historiography (American or European)
Introduction to the work of representative historians and important theories of historical interpretation. Completion of twenty credit hours of history required.

Italian/ITA
111-4 Essentials of Italian
Introduction to Italian with an emphasis on speaking the language.

112-4 Essentials of Italian
Continuation of ITA 111 with an emphasis on speaking the language. Prerequisite: ITA 111 or equivalent.

113-4 Essentials of Italian
Continuation of ITA 112 with an emphasis on speaking the language. Prerequisite: ITA 112 or equivalent.

Japanese/JPN
111-4 Essentials of Japanese
Introduction to Japanese with an emphasis on speaking the language.

112-4 Essentials of Japanese
Continuation of JPN 111 with an emphasis on speaking the language. Prerequisite: JPN 111 or equivalent.

Latin/LAT
Students who have studied Latin elsewhere should consult the Department of Classics for the appropriate course level. Placement and proficiency tests can be given.

101-4, 102-4, 103-4 Beginning Latin
Essentials of the Latin language. Must be taken in sequence.

201-4, 202-4 Intermediate Latin
Review of essentials and reading for comprehension in selected authors. Must be taken in sequence. Prerequisite: LAT 103 or equivalent.

Reading Courses
The following courses offer a wide variety of authors and topics; they may be repeated for credit by number, although not by content. Students should consult the department for the scheduled subjects and authors. LAT 202 or equivalent is prerequisite for all 300- and 400-level language courses.

351-4 Readings in Roman Drama
Plautus, Terence, Seneca. Study of at least one play in Latin. Topics for investigation include importance of Plautus and Terence for the reconstruction of Greek New Comedy, architecture of the Roman theatre, history of Roman tragedy, relationship of Seneca's tragedies to his Stoic philosophy.

353-4 Readings in Roman Epic
Virgil's Aeneid, Ovid's Metamorphoses, Lucan, Statius, Valerius Flaccus, Silius. Topics for investigation include intent and structure of the Aeneid, history and development of Roman epic, structure and transitional devices in the Metamorphoses, nature of rhetorical epic.

355-4 Readings in Roman Poetry
Roman lyric and elegiac poetry: Virgil's Eclogues, Catullus, Horace, Propertius, Tibullus, Ovid. Topics for investigation include meters and style of Latin lyric, amatory tradition, influence of Hellenistic poetry.

357-4 Readings in Roman Satire
Horace, Juvenal, Persius, Petronius, Martial. Topics for investigation include development of this peculiar Roman genre, fragments of Lucilius, satirical methods and techniques, satiric epigram, satire as a source of information about Roman private life.
399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of Latin.

451-4 Readings in Roman Didactic Literature
Study of Roman philosophical and didactic literature: Lucretius, Virgil's Georgics, Cicero's philosophical essays, Quintilian. Topics for investigation include Roman attitudes toward Epicureanism, farming as a symbol of contemporary Roman politics, Cicero's synthesis of Greek philosophy, Quintilian, and a gentleman's education.

453-4 Readings in Roman History
Sallust, Livy, Tacitus, Suetonius. Topics for investigation include Roman historiographical tradition, family and political influences, evidence from nonliterary sources, influence from Greek historiography.

455-4 Readings in Roman Politics and Government
Cicero's political essays and speeches; the letters of Cicero and Pliny. Topics for investigation include the nature of Roman political campaigns, selections from Roman constitutional law, information from inscriptions, Augustus' Res Gestae.

481-1 to 4 Independent Reading
Restricted to senior candidates for departmental honors.

Liberal Arts/LA

101-1 Images of Man
Multidisciplinary course composed of a series of presentations by experienced professors who present different concepts of man and man's contributions, past and present, from a humanistic point of view.

103-2, 105-4 Freshman Cooperative Education
Work experience in a liberal arts discipline. Faculty supervise and evaluate learning which requires planned and approved learning objectives, oral and/or written reports, employer evaluation, and conference with faculty supervisor. Approval of department, college, and cooperative education required. 103: part-time work experience. 105: full-time work experience. Each course may be repeated once.

199-1 to 2 Great Decisions
Faculty-led reading and discussion group centering on major foreign policy issues facing the United States. Topics vary each year.

203-2, 205-4 Sophomore Cooperative Education
Work experience in a liberal arts discipline. Faculty supervise and evaluate learning which requires planned and approved learning objectives, oral and/or written reports, employer evaluation, and conference with faculty supervisor. Approval of department, college, and cooperative education required. 203: part-time work experience. 205: full-time work experience. Each course may be repeated once.

303-2, 305-4 Junior Cooperative Education
Work experience in a liberal arts discipline. Faculty supervise and evaluate learning which requires planned and approved learning objectives, oral and/or written reports, employer evaluation, and conference with faculty supervisor. Approval of department, college, and cooperative education required. 303: part-time work experience. 305: full-time work experience. Each course may be repeated once.

314-4 Research Methods in the Social Sciences
For developing skills in creating, manipulating, documenting, and analyzing data bases using SAS. Includes planning for and acquiring computer-compatible data and practical applications in social science disciplines. Prerequisite: AIS 103 or CS 141 or equivalent.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of liberal arts.

403-2, 405-4 Senior Cooperative Education
Work experience in a liberal arts discipline. Faculty supervise and evaluate learning which requires planned and approved learning objectives, oral and/or written reports, employer evaluation, and conference with faculty supervisor. Approval of department, college, and cooperative education required. 403: part-time work experience. 405: full-time work experience. Each course may be repeated once.

490-1 to 6 Senior Project in Selected Studies
Intensive studies or work in a selected topic designed to meet the particular needs of participating students. The characteristics of each specific project must be approved by the Selected Studies Degree Committee. May be repeated to a maximum of eighteen credit hours. Senior standing and approval of the degree committee required.
Library and Communication Science/LCS

110-1 Using the Library
Presents basic approaches for using the library. Includes the card catalog, library classification, indexes, and introduction to selected reference sources for use in research projects and term reports.

210-1 Using Business Information Sources
Survey course in the business information sources of the library. Covers standard business bibliography and reference information sources as well as government document sources. Students learn strategies for researching business reports in the library. Graded pass/unsatisfactory. Major in business or permission of instructor required.

370-1 to 4 Independent Study
Advanced individual study in an area not available through regular course offerings. Departmental approval required.

411-4 Reference Materials and Bibliography
Important reference works, indexes, and bibliographies with practical problems in their use. The student examines his or her role in the interaction between the user and the information environment.

421-3 Cataloging and Classification
Study of the development of the Dewey Decimal classification scheme and its application to library media center situations. The student learns the basic principles of descriptive cataloging, and receives instruction in the application of current cataloging rules, including subject headings.

435-4 Production of Instructional Materials
A nontechnical course, with emphasis on production of locally made materials for classroom use, including mounting, lettering, script writing, photography, tape recording, and transparency production.

445-3 Storytelling
Fundamental principles of the art of storytelling, techniques of adaptation and presentation. Broad foundation in materials of literature, styles of presentation, story cycles, methods of learning, practice in storytelling. Planning the story hour for the school and public library, recreational center, radio, and television.

446-3 Teaching Library and Research Skills in the Elementary and Secondary Schools
Study of the hierarchy of library and library research skills, ways to develop materials and to teach those skills; introduction to computer assisted information retrieval.

449-3 Introduction to Instructional Media
Survey course in instructional media including the interpretation of visuals (projected and nonprojected), film, instructional TV, gaming, audio technology, multimedia systems, computers, operation of audiovisual equipment, and media facilities. Focus is on the appropriate use of media for specific instructional outcomes.

451-3 Educational Utilization of Broadcast Media
A study of the potential, the limitations, and the techniques for the utilization of broadcast media in the educational process.

455-4 Television Production
Survey of elementary problems of television production. Introduction to television techniques, participation on television productions in a wide variety of capacities. Programming utilization within the educational setting emphasized. Junior standing or departmental approval required.

456-4 Advanced Television Production
Designed to improve the skills, knowledge, and creativity used in television broadcasting. Programming and production for educational and informational broadcasts are emphasized. Prerequisite: LCS 455 or permission of instructor.

457-1 to 4 Studies in Broadcasting
Intensive study of a selected area of broadcasting to meet the needs of educational broadcasting personnel, audiovisual specialists, and others interested in media and communications. Specific title announced each time course is offered. Junior standing or departmental approval required.

461-3 Selection of Materials
Selection of materials suitable for the library media-learning center or the elementary/secondary school with special emphasis on nonprint materials.

463-3 Literature for Adolescents and Young Adults
The study of the literature appropriate for adolescents and young adults. Survey, evaluations, selections of books, techniques of reading guidance, and promotion of books. Junior standing required.

470-1 to 6 Workshop in Library and Communication Science
Intensive study of a selected area of library and communication science to meet the needs of librarians, audiovisual personnel, and others interested in media and communications. Junior standing or departmental approval required.
481-1 to 12 Library/Media Practicum in the Elementary School
Supervised practice in a public school library. Formal application must be made through the office of the director of laboratory experiences in education during the first two weeks of the quarter prior to enrollment. May be taken concurrently with practice teaching. Prerequisite: LCS 411, 421, 461, 491. Offered fall, winter, and spring quarters.

482-1 to 12 Library/Media Practicum in the Secondary School
Supervised practicum in a public school library. Formal application must be made through the office of the director of laboratory experiences in education during the first two weeks of the quarter prior to enrollment. May be taken concurrently with practice teaching. Prerequisite: LCS 411, 421, 449, 461, 491. Offered fall, winter, and spring quarters.

485-3 Computers for Educators
Computer software and hardware systems and their uses are treated. Their effect on education and the teacher is emphasized. Limited direct interaction with the microcomputer is included.

486-3 Applications of Computers in Education
Exploration of types of educational applications, software selection criteria, discipline-oriented utilization techniques, staff development, and introduction to software development. A limited amount of hands-on time with computers is available.

487-4 Introduction to BASIC for Educators
Introduction to microcomputers and computer programming with BASIC language. Programs and techniques useful to educators. Topics include techniques for program design, flowcharting, coding, testing, and documentation.

491-3 Organization and Administration of School Media Centers
Administration practices and services that relate to the school library media center. Considers problems pertaining to standards, legislation, personnel, planning facilities, materials, instruction, and management procedures. Nine credit hours of library communication science required.

Linguistics/LI

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of linguistics.

471-4 Introduction to Historical and Comparative Linguistics
(Listed jointly with Department of Modern Languages; see FR 471, GER 471, RUS 471, SPN 471.) Principles of historical and comparative study of languages; introduction to Indo-European, Germanic, Romance, and Slavic philology.

Management/MGT

200-3 Elements of Administration and Supervision
Provides students in various disciplines with an understanding of administrative processes and problems while developing practical skills to increase effectiveness in administrative matters. Topics include the role and functions of the administrator, organizational dynamics, leadership, supervision, motivation, decision making and problem solving, group dynamics, goals, objectives, integration of interests in organizations, and social issues in administration. For nonbusiness majors.

All of the following courses require junior standing in addition to the listed prerequisites.

301-3 Principles of Management
General nature and functions of organization and management in society, embodying underlying trends. Prerequisite: ACC 203; EC 202, 203.

302-3 Introduction to Organizational Behavior
Development of an understanding of behavior within a modern organization. Interrelationships of the individual, informal and formal groups. Prerequisite: MGT 301.

303-3 Introduction to Production Systems
Survey of functions making up the production system. Includes product design, process design, production standards, work measurement, design of jobs and work methods, forecasting, scheduling, quality control, and inventory control. Prerequisite: MGT 301, QBA 202.

411-3 Concepts and Techniques of Supervision
Focus on the concepts and techniques of effective supervision as they relate to productivity and achievement of organizational and personal objectives. Prerequisite: MGT 302.

412-3 Management-Union Relations
Analysis of bargaining requirements and methods, agreement development and administration, and trends in collective bargaining. Prerequisite: MGT 302.
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415-3 Labor-Management Relations in Government
Analytical study of the development of collective bargaining at all levels of government; topical areas include history, present environment, union structure, law, approaches to negotiation, tactics, and trends. Prerequisite: MGT 421 or permission of instructor.

421-3 The Personnel Function
Analysis of the human resources system, interrelationship of policy areas such as staffing, development, and utilization. Prerequisite: MGT 302.

422-3 Compensation Administration
Analysis of job evaluation, job design, wage and salary administration, and similar topics as related to personnel objectives. Prerequisite: MGT 421.

423-3 Seminar in Personnel Management
Research, analysis, and discussion of contemporary issues involving the management of personnel. Prerequisite: MGT 421.

431-3 Quality Control
Concepts, objectives, and application of management of quality in production systems. Emphasis on techniques and methods used to control operating processes and incoming and outgoing quality levels. Prerequisite: MGT 303, MTH 226, QBA 202 or equivalent.

432-3 Production and Inventory Control
Advanced course in techniques for production and inventory management. Major topics include forecasting, inventory management systems, and material requirements planning (MRP). Prerequisite: MGT 303, MTH 226, QBA 202 or equivalent.

433-3 Industrial and Institutional Purchasing
Lectures and case studies relating to materials management. Emphasis on purchasing, receiving, storing, and inventory control; value analysis and specialized problems in institutional procurement. Prerequisite: MGT 301.

434-3 Special Topics in Management
Topics as listed. 434-A, Small Business Consulting; 434-B, Topics in Operations Management; 434-C, Topics in Personnel Administration; 434-D, Topics in Industrial Relations; 434-E, Topics in Systems Management; 434-F, Topics in Organizational Development; 434-G, Contract Negotiation. Prerequisites announced in the quarterly class schedule.

477-1 to 3 Special Studies in Management
Reading or research in a selected field of management. Topics vary from quarter to quarter. May be repeated to a maximum of ten credit hours. Senior standing in management and permission of department chair required.

478-3 Honors: Independent Study in Management
Research in management for fulfillment of the Honors Program project requirement. Permission of department chair required.

481-4 Business Policy and Administration
Integrative course requiring application of all functional areas of business in the analysis and solution of business problems. Strategic management is the core synthesizing concept of study. Students are required to work in teams inside and outside the classroom for simulation gaming and case analyses. Should be taken in the final stage of the undergraduate program in the senior year. Senior standing and admission to the College of Business and Administration required.

482-3 Public Policy in the Business Environment
Relationship between business and government; the business environment and public policy; the corporate role in American society; business social responsibility. Senior standing and admission to the College of Business and Administration required.

Marketing/MKT
All of the following courses require junior standing, in addition to the listed prerequisites.

301-3 Principles of Marketing
Explores the structure and functioning of the American marketing system; emphasis on its economic and social determinants, cost, productivity, and efficiency. Prerequisite: EC 201, 202, 203; or permission of department chair.

302-3 Marketing Management
Factors involved in the management of the marketing function relative to product development, promotion, pricing, physical distribution, and determination of marketing objectives within the framework of the environment. Prerequisite: MKT 301.

303-3 Consumer Behavior
The behavior content of marketing in consumer, industrial, and international fields. Examination of applicable theory, research findings, and concepts that are provided by psychology, sociology, anthropology, and marketing. Stresses conceptual models of buyer behavior based upon sources of influence: individual, group, culture, environment. Required of marketing majors. Prerequisite: MKT 302.

336-3 Fundamentals of Personal Selling
Nature of personal selling in the marketing environment; special emphasis on personal selling-marketing relationships, buyer motivation and behavior, selling strategy, and techniques of selling. Required of marketing majors. Prerequisite: MKT 302.
401-3 Sales Management
Objectives, policies, and techniques of sales force management. Special role of the sales manager in marketing, selling, personnel, and financial responsibilities and opportunities. Prerequisite: MKT 302

411-3 Credit Management
Use of credit as a tool of marketing management. Includes the basic concept of credit, social influences of credit, production of the credit service, agencies and institutions involved in performance of credit functions, and technology of credit management. Prerequisite: MKT 302.

416-3 Product Management
An intensive study of the product development and management function in modern organizations with particular emphasis on technique, procedure, concept, and theory applications to real and simulated product management problems. Required of marketing majors. Prerequisite: MKT 301, 302.

418-3 Price Management
Critical study and extensive application of existing and developing pricing techniques, procedures, concepts, and theories to simulated and real price management problems. Required of marketing majors. Completion of nine credit hours of accounting and nine credit hours of economics required. Prerequisite: MKT 301, 302.

421-3 International Marketing
Analysis of managerial and operational problems of the multinational business organization. Emphasis on the role of environmental differences in influencing marketing strategy. Prerequisite: MKT 302.

431-3 Physical Distribution
Overview of logistics as a part of the firm's marketing program. Analysis of physical facilities, transportation, and alternative channels of distribution. Qualifies as distribution option for marketing majors. Prerequisite: MKT 302.

435-3 Starting New Ventures
Concepts and techniques of how to start your own business. Development of a business plan to encompass opportunity assessment, market analysis, financing, staffing, production, tax accounting, and legal, insurance, and marketing aspects. For nonbusiness majors only. Junior standing required. Cannot be applied toward business degree.

441-3 Advertising
Advertising as a communication tool in marketing management. Emphasis on decision making relative to message strategy, media selection, creativity, budgets, and appraisal of advertising effectiveness. Required of marketing majors. Prerequisite: MKT 302.

442-3 Direct Marketing
An introduction to the theories, concepts, and techniques of modern direct marketing. Course coverage includes direct response methods in consumer and industrial marketing and nonprofit organization marketing. Prerequisite: MKT 301.

451-3 Marketing Research
Examination of the marketing research process in both a basic and an applied sense; focus on concepts and techniques currently employed in behavioral research. Prerequisite: MKT 301, 302, 303; QBA 201, 202.

461-3 Principles of Retailing
Analysis of the performance of marketing functions at the retail level. Emphasis on institutional compositions, competitive factors, and management of the marketing mix as it relates to retail market segments. Qualifies as distribution option for marketing majors. Prerequisite: MKT 302.

471-3 Industrial Marketing
Nature, evolution, and functions of industrial marketing and wholesaling operations, market structure, pricing, promotion, government economics, and ethical aspects. Prerequisite: MKT 302.

475-3 Entrepreneurship
How to start your own business. Concepts and techniques of planning to initiate or purchase a company. Students develop a written business plan for a new venture. Prerequisite: MKT 302, ADM 350, FIN 302.

477-1 to 6 Independent Studies in Marketing
Readings or research in a selected field of marketing. Senior standing and permission of instructor required.

478-3 Honors: Independent Study in Marketing
Research in marketing for fulfillment of the Honors Program project requirement. Permission of department chair required.

480-1 to 3 Special Topics in Marketing
Seminar in special topics such as consumerism and social issues, nonprofit organization marketing, advanced retailing management, channels of distribution, forecasting, and entrepreneurship. Specific topic and prerequisites announced in quarterly class schedule. Channels of distribution topic qualifies as distribution option for marketing majors. Prerequisite varies, depending on topic.
481-3 Internship in Marketing
One quarter, faculty-supervised internship in retailing, marketing research, advertising, industrial selling, nonprofit sector marketing, or other areas of marketing. Course requires monthly seminars and reports. Permission of director of marketing internship program required. Senior standing or departmental approval required. Prerequisite varies with nature of internship.

492-3 Marketing Policy
Final course to integrate the student's work in marketing and to promote marketing problem-solving capabilities. Course involves group preparation of a marketing plan. Senior standing in the College of Business and Administration and completion of majority of degree course work required. Required of marketing majors.

Mathematics/MTH
The middle digit of the course number indicates the area of mathematics as follows: 1-computer science, 2-business mathematics, 3-analysis, 4-mathematics education, 5-algebra, 7-geometry.

102-3 Elementary Algebra
Programmed beginning algebra. Sets, counting numbers, integers, rational numbers, equations in two variables, polynomials, factoring, fractions, fractional and quadratic equations. At least Level 2 on math placement test and departmental approval required.

127-3 Intermediate Algebra
Real numbers and algebraic expressions, factoring, algebraic functions, graphs of lines, quadratic equations, radicals, principle roots, laws of exponents, rational exponents. Prerequisite: MTH 102 or equivalent or at least Level 3 on math placement test.

128-5 Algebra for College Students
This course is best suited to students having little recent experience with topics beyond intermediate algebra or whose mastery of intermediate algebra is less than perfect. Topics covered are the same as in MTH 129 but are accompanied by more practice of necessary skills. In addition, skills learned in intermediate algebra are reinforced and clarified in the context of these more advanced topics. Credit will not be granted to students with credit for MTH 129. Prerequisite: MTH 127 or equivalent or at least Level 4 on math placement test.

129-3 College Algebra I
This course is best suited for students who have previous experience with advanced algebra but require a review or who have excellent mastery of intermediate algebra. Topics include order, absolute value, linear and factored quadratic inequalities, equations and inequalities in two variables, simultaneous solutions, graphs of lines, circles, parabolas, and factored polynomials, functions, functional notation, exponential and logarithmic functions, and applications. Credit will not be granted to students with credit for MTH 128. Prerequisite: MTH 127 or equivalent or at least Level 4 on math placement test.

130-3 College Algebra II
Complex numbers, synthetic division, remainder and factor theorem, fundamental theorem of algebra, depressed equations, sequences and series, matrices, Gauss-Jordan, determinants, Cramer's Rule. May be taken concurrently with MTH 131. Prerequisite: MTH 128 or 129 or equivalent or at least Level 5 on math placement test.

131-3 Trigonometry
Trigonometric and inverse trigonometric functions. May be taken concurrently with MTH 130. Prerequisite: MTH 130 or equivalent or at least Level 6 on math placement test.

132-5 Calculus I
Conic sections, functions, limits, continuity, the derivative, derivatives of algebraic and trigonometric functions, and applications of the derivative. Prerequisite: MTH 130, 131; or equivalent or Level 7 on math placement test.

133-5 Calculus II

200-3 Refresher Calculus I
For those who want to review calculus. This course and MTH 300 cover the material of MTH 132, 133, 231. Graded pass/unsatisfactory. Knowledge of calculus or permission of instructor required. Usually offered in the evening.

224-3 Calculus for Administrative, Life, and Social Sciences I
Functions, rates of change, limits, derivatives of algebraic functions, and applications including maxima and minima. Oriented toward students in the social, managerial, and life sciences. Credit will not be granted to students with credit for MTH 132. Prerequisite: MTH 128 or 129 or equivalent or at least Level 5 on math placement test.
226-3 Calculus for Administrative, Life, and Social Sciences II
Exponential and logarithmic functions, indefinite and definite integrals with applications, partial derivatives and optimization, introduction to elementary linear algebra and set theory. Prerequisite: MTH 224.

231-5 Calculus III
Applications of the definite integral, polar coordinates, parametric equations, Infinite series, power series, vector algebra in the plane and space. Prerequisite: MTH 232.

232-5 Calculus IV
Partial derivatives, definite integrals in the plane and space. Vector functions and their derivatives, motion in space, vector fields, line and surface integrals, Green's theorem, divergence theorem, Stokes' theorem. Prerequisite: MTH 231.

233-5 Differential Equations
Elementary first order equations, linear equations, linear systems, series solutions, Laplace transform applications. Uniqueness and existence theorems for solutions. Prerequisite: MTH 231.

253-3 Elementary Matrix Algebra
An elementary course in matrix theory covering matrices, linear equations, determinants, linear transformations, eigenvalues, and eigenvectors. Credit will not be granted to students with credit for MTH 355. Prerequisite: MTH 133 or equivalent.

257-3 Discrete Mathematics for Computing
Discrete mathematics useful in computing: elementary logic and set theory, induction, binary relations and trees, asymptotic behavior of functions. Prerequisite: MTH 133, CS 142.

300-3 Refresher Calculus II

304-4 Mathematics as a Human Activity
Shows nonscience students some of the applications and uses of mathematics. Enrollment limited to nonscience majors of at least sophomore standing with no math course beyond MTH 130.

306-3 Mathematical Modeling
Structure and properties of mathematical models. Size effects, dimensional analysis, graphical methods, comparative statics, stability, optimization techniques, probabilistic models, Monte Carlo simulation. Junior standing and completion of two quarters of calculus required.

316-4, 317-4 Numerical Methods for Digital Computers
Introduction to numerical methods used in the sciences. Methods of interpolation, data smoothing, functional approximation, integration, solutions of systems of equations, and solutions of ordinary differential equations. 3 hours lecture, 2 hours lab. Prerequisite: for 316, MTH 231, MTH 253 or 355, CS 142 or 210; for 317, MTH 233, 316.

332-3 Complex Variables
Topics discussed include power series expansion, the formula of Cauchy, residues, conformal mappings, and elementary functions in the complex domain. An applied course intended for students in science and engineering. Prerequisite: MTH 231.

333-3 Partial Differential Equations and Boundary Value Problems

343-4, 344-4 Mathematical Foundations I, II
Sets, relations, functions of the whole number system, place value notation, modular numbers, permutations and combinations, development of the integers and rational numbers, fractional and basal notations, polynomial and rational functions. Must be taken in sequence. Enrollment limited to elementary education majors.

345-4 Geometry for Elementary School Teachers
Axioms, finite geometries, nonmetric and metric lengths, angles, area, volume, polygonal figures, elementary curves. 3 hours lecture, 1 hour lab. Prerequisite: MTH 344.

355-5 Matrix Algebra
Matrices, systems of equations, vector spaces, inner products, linear transformations, determinants, eigenvalues, eigenvectors, quadratic forms, and symmetric matrices. Prerequisite: MTH 231.

381-3 Elementary Number Theory
Divisibility properties of integers, prime numbers, congruences, the Chinese remainder theorem, quadratic reciprocity law, Mobius inversion formula, Euler f-function, other number-theoretic functions. Prerequisite: MTH 231 or junior standing.
Courses/Mathematics

399-1 to 5 Selected Topics
Selected topics in mathematics. May be repeated. Permission of instructor required.

407-3 Optimization Techniques

410-4 Theoretical Foundations of Computing
(Listed jointly with Department of Computer Science; see CS 410.) Examines the limitations of algorithmic processes in problem solving. The following approaches to this issue are presented: Turing machines, Markov algorithms, recursive functions, and the methods of Kleene and Post. Other topics include Church's hypothesis as well as the halting problem and related decision problems. Prerequisite: CS 400 and a 300-level mathematics course, or CS 142 and a 400-level mathematics course.

423-3 to 4 Advanced Logic
(Listed jointly with Department of Philosophy; see PHL 423.) Treats logic as an object rather than a subject. Contains extensions to higher order logic, but mainly emphasizes the use of logic and the limitations of logical systems. Topics vary from quarter to quarter. Prerequisite: PHL 123, 323, or one of these together with one math course beyond calculus, or permission of instructor.

431-3 Real Variables I
Functions, sequences, limits, continuity, differentiability, integration, and mean-value theorems. Senior standing and MTH 280 recommended. Completion of the calculus sequence required.

432-3 Real Variables II
Infinite series, uniform convergence, Taylor series, improper integrals, special functions, and Fourier series. Prerequisite: MTH 431.

433-3 Real Variables III
Theory of functions of several variables, vector-valued functions. Prerequisite: MTH 432.

434-5 Introduction to Complex Analysis I
Complex arithmetic, differentiation (analytic functions, the Cauchy-Riemann equations), elementary functions and their mapping properties, integration (Cauchy's theorem, Cauchy integral formula), Taylor and Laurent series, poles, residues, the residue theorem. Recommended preparation: MTH 431. Prerequisite: MTH 232.

435-3 Introduction to Complex Analysis II
Residues, conformal mappings, Schwarz-Christoffel transformations, harmonic functions, Poisson integral formula, Dirichlet problem. Prerequisite: MTH 434.

440-3 History of Mathematics
Development of calculus from antiquity through Newton, Leibnitz, development of classical analysis; the rise of abstraction; set theory, algebra, topology; modern analysis. Prerequisite: MTH 231, 451, 471.

451-3, 452-3 Introduction to Modern Algebra I, II
Introduction to abstract algebraic structures, including groups, rings, integral domains, and fields. Recommended preparation: MTH 280. Prerequisites: for 451, MTH 231; for 452, MTH 451.

457-3 Combinatorics
Topics are permutations, combinatorics, generating functions, recurrence relations, Polya's theory of counting. Junior standing required. Prerequisite: MTH 231.

458-3 Applied Graph Theory
(Listed jointly with Department of Computer Science; see CS 458.) Introduction to methods, results, and algorithms of graph theory. Emphasis on graphs as mathematical models applicable to organizational and industrial situations. Junior standing required. Prerequisite: MTH 231, CS 142.

471-3 Geometry
Topics in foundations of Euclidean geometry, introduction to non-Euclidean and other geometries. Prerequisite: MTH 231.

472-3 Projective Geometry
Projective and affine planes and spaces, change of coordinates; projective transformations; conics. Prerequisite: MTH 231.

474-3 Calculus on Manifolds
A rapid treatment of those topics in analysis and topology necessary to develop the notions of manifold, Gaussian and Riemannian sectional curvature. Prerequisite: MTH 232 or equivalent.

475-4 Differential Geometry
Calculus on Euclidean space frame fields, calculus on a surface, shape operators, geometry of surfaces in Euclidean 3 space. Prerequisite: MTH 232.

476-4 Computer Graphics I
(Listed jointly with Computer Engineering; see CEG 476.) Principles of computer graphics: representation of two- and three-dimensional space on a display; data compression; hidden surface problems. Computer graphics systems; displays, input; graphic software packages; real time applications. Prerequisite: MTH 253, CS 400, or permission of instructor.
477-4 Computer Graphics II
(Listed jointly with Computer Engineering; see CEG 477.) Continuation of MTH 476. Covers selected topics in detail including hidden line and surface removal, shading models, curved surface generation, and color models. Students are expected to understand and implement sophisticated algorithms in these areas. Projects are individualized and creative. Selected papers are used for in-depth material. 3 hours lecture, 2 hours lab. Prerequisite: MTH 476.

480-1 Methods of Applied Mathematics: Geometric Methods
The basic mathematical tools for the description of physical systems in three-dimensional space: vector and tensor analysis, matrices, curvilinear coordinate systems. Intended for students in applied fields. Prerequisite: MTH 232, 253 or 355.

481-3 Methods of Applied Mathematics: Differential Equations

482-3 Methods of Applied Mathematics: Integral Methods

488-1 to 5 Independent Reading
Topics vary from quarter to quarter. Permission of instructor required.

492-1 to 5 Undergraduate Seminar
Permission of instructor required.

499-1 to 5 Selected Topics
Selected topics in mathematics. May be repeated. Permission of instructor required.

Medical Technology/MT
Enrollment in all of the following courses is limited to medical technology interns.

434-3 Introductory Clinical Laboratory Science
(Listed jointly with Department of Biological Sciences; see BIO 434.) Introduction to procedures and techniques related to clinical laboratory function. Completion of preprofessional medical technology curriculum required.

435-2 Advanced Clinical Laboratory Science
(Listed jointly with Department of Biological Sciences; see BIO 435.) Study of advanced methodology and instrumentation which may include computer applications, data management, research data collection, and statistical analysis. Completion of preprofessional medical technology curriculum required.

436-5 Diagnostic Microbiology
(Listed jointly with Department of Biological Sciences; see BIO 436.) Application of microbiological principles to diagnosis, infection, and resistance. Completion of preprofessional medical technology curriculum required.

437-5 Methods of Diagnostic Microbiology
(Listed jointly with Department of Biological Sciences; see BIO 437.) Laboratory experiments in diagnostic microbiology. Corequisite: MT 436.

438-5 Clinical Chemistry
(Listed jointly with Department of Biological Sciences; see BIO 438.) Application of principles of biochemistry to the human in health and disease. Completion of preprofessional medical technology curriculum required.

439-5 Clinical Laboratory: Biochemistry
(Listed jointly with Department of Biological Sciences; see BIO 439.) Laboratory course using current clinical chemistry techniques for the analysis of human tissues and fluids. Corequisite: MT 438.

440-4 Body Fluid Analysis
(Listed jointly with Department of Biological Sciences; see BIO 440.) Study of body fluids covering the pathophysiology of their formation and nature, as well as the techniques of examination for diagnostic information. Completion of preprofessional medical technology curriculum required.

442-4 Hematology
(Listed jointly with Department of Biological Sciences; see BIO 442.) Study of hematopoiesis, blood cell cytology, and clotting mechanisms of human blood. Completion of preprofessional medical technology curriculum required.

443-4 Hematology Laboratory
(Listed jointly with Department of Biological Sciences; see BIO 443.) Laboratory study of cellular elements of blood and hemostasis. Corequisite: MT 442.

444-3 Immunohematology
(Listed jointly with Department of Biological Sciences; see BIO 444.) Immunology and genetics of human blood groups and types. Completion of preprofessional medical technology curriculum required.
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445-3 Immunohematology Laboratory
(Listed jointly with Department of Biological Sciences; see BIO 445.) Study of immunology as applied to human blood isoantigens and isoantibodies. Corequisite: MT 444.

446-3 Immunology
(Listed jointly with Department of Biological Sciences; see BIO 446.) Study of antigens and antibodies with emphasis on in vivo and in vitro reactions. Completion of preprofessional medical technology curriculum required.

447-3 Laboratory Immunology: Serology
(Listed jointly with Department of Biological Sciences; see BIO 447.) Study of detection and measurement of antigens or antibodies using in vitro systems. Corequisite: MT 446.

448-2 Clinical Pathology Correlation
(Listed jointly with Department of Biological Sciences; see BIO 448.) Correlation of clinical laboratory findings with different human physiological states. Completion of preprofessional medical technology curriculum and departmental approval required.

449-2 Clinical Pathology Seminar
(Listed jointly with Department of Biological Sciences; see BIO 449.) Presentation and discussion of topics in clinical laboratory medicine. Completion of preprofessional medical technology curriculum and departmental approval required.

450-1.5 Pediatric Clinical Laboratory
(Listed jointly with Department of Biological Sciences; see BIO 450.) Study of basic analytical techniques applicable to the examination of pediatric body fluids and tissues. Enrollment limited to students in medical technology clinical year.

Microbiology and Immunology/M&I

220-5 Microbiology of the Human Environment
Biology of viruses, bacteria, fungi, protozoans, and helminths as related to their natural environments and host-parasite interaction. An introductory microbiology course for students in environmental health, nursing, and patient-oriented paramedical health professions. 4 hours lecture, 2 hours lab. Prerequisite: BIO 112 or departmental approval.

426-3. 427-3 Pathogenic Microbiology
Study of microorganisms pathogenic for man and animals; emphasis on mechanisms of microbial pathogenesis and host resistance. Prerequisite: for 426, BIO 202, CHM 216, or departmental approval; for 427, M&I 426, BIO 202 or 402, CHM 216, or departmental approval.

428-3 Principles of Laboratory Medical Microbiology and Immunology

431-3 Basic Virology
Basic introduction to the field of virology, plant, animal, and bacterial viruses. Major emphasis on the intrinsic properties of viruses and their interaction with cells, multiplication, genetics, and tumor induction. Prerequisite: BCH 421, BIO 402, or permission of instructor.

441-5 Immunobiological Techniques
Lectures, laboratory exercises, and demonstrations about physical chemical properties of antigens and antibodies, the mechanisms of their reactions, and the effects of these reactions on parasites and host tissues. The development of humoral and cellular resistance to parasites, tissue grafts, and tumors is discussed on cellular and molecular levels. 3 hours lecture, 4 hours lab. Prerequisite: M&I 426, BIO 402, or permission of instructor.

445-5 Immunobiology
A study of biology of the immune system in terms of current concepts of antibody formation and function. Acquired, delayed, and immediate hypersensitivity are studied with respect to immunological deficiencies, malignancy, tolerance, graft rejection, infection, and acquired resistance. 4 hours lecture, 1 hour recitation. Prerequisite: M&I 426, BIO 402, or permission of instructor.

455-4 Medical Mycology
Study of medically important fungi and their pathogenesis in man and animals. Emphasis on proper isolation and identification procedures. For health sciences majors. 3 hours lecture, 3 hours lab. Prerequisite: M&I 426 or 726.

488-1 to 4 Independent Reading
Junior standing and departmental approval required.

499-1 to 4 Special Problems in Microbiology
A maximum of four credit hours applicable to degree requirements. A minimum 2.2 cumulative grade point average and departmental approval required.

Military Science/MIL

111-1 Map Reading I
Introduction to map reading, including identifying terrain features, using grid systems, plotting locations, and measuring distances.
112-1 Map Reading II
Continuation of MIL 111. Map reading using intersection, resection, modified resection, compass, and graphic representation. A one-weekend practical exercise is optional. Prerequisite: MIL 111 or permission of instructor.

113-1 Leadership I
Introduction to leadership, emphasizing fundamentals and principles of leadership, characteristics of a group, and traits of a leader.

211-2 Squad Tactics
Analysis of the light-infantry squad’s weapons and employment and the leader’s role in directing and controlling small units in the execution of offensive and defensive tactical missions. 2 hours lecture, 1 hour lab.

212-2 Leadership II
Analysis of leadership theories and management tasks, including analysis of organizational structures, planning and organizing, and controlling rewards and punishments. Extensive use of case studies in leadership and management. 2 hours conference, 1 hour lab.

213-2 First Aid
Instruction and practical experience in the treatment of casualties, including CPR. Analysis of the leader’s role in establishing preventive medicine and physical readiness programs. 2 hours lecture and physical education, 1 hour lab.

231-2 Advanced Tactics I
Analysis of geography as it pertains to military functions, study of military weapons systems, and intelligence-gathering capabilities. Requires one weekend training exercise in the field and a monthly physical fitness test.

232-2 Advanced Tactics II
Analysis of the leader’s role in directing and coordinating the efforts of individuals and small units in the execution of offensive and defensive tactical missions. Discussion of the various branches of the army. Requires one weekend training exercise and a monthly physical fitness test. Students travel to Fort Harrison, Indiana, for testing.

233-2 Military Instruction
Development of ability to express oneself clearly and accurately with emphasis on analysis of military problems, evaluation of situations, and preparation and delivery of logical solutions. Basic methods of instruction.

241-2 Military History
American military history from emergence of power in 1898 through the present, including effective and ineffective leadership, uses of the principles of war, and social attitudes toward the U.S. military.

242-2 Advanced Leadership
Study of combat operations and various military teams, to include military geography, current military operations, and coordination and planning necessary between elements of the team.

243-2 Applied Leadership and Management
Study and analysis of selected leadership and management problems involved in unit administration and military justice. Obligations and responsibilities of an officer on duty, including the chain of command and officer-enlisted relationships.

311-2 Advanced Tactics I
Analysis of the small unit leader’s role in the execution of tactical missions. Requires weekend training exercises and participation in a physical fitness program. 2 hours conference, 1 hour lab. Prerequisite: MIL 111, 112, 113, 211, 212, 213 or equivalent.

312-2 Advanced Tactics II
Study of military weapons and equipment and analysis of geography as it pertains to military operations. Requires participation in weekend exercises and physical training program. 2 hours conference, 1 hour lab. Prerequisite: MIL 311.

313-2 Military Instruction
Development of ability to express oneself clearly and accurately with emphasis on analysis of military problems, evaluation of situations, and preparation and delivery of logical solutions. Requires participation in weekend training exercises and a physical fitness program. 2 hours conference, 1 hour lab. Prerequisite: MIL 312 or departmental approval.

411-2 Staff Functions
Study of the organization and functions of military staffs with an in-depth analysis of the coordinating staff. An introduction into officer-enlisted relations. Requires participation in weekend training exercises and a physical fitness program. 2 hours conference, 1 hour lab. Prerequisite: MIL 311, 312, 313; or permission of instructor.

412-2 Administration and Ethics
Study of military correspondence and briefing techniques/formats. An introduction to professionalism and military professional ethics. Requires participation in weekend training exercises and a physical fitness program. 2 hours conference, 1 hour lab. Prerequisite: MIL 411 or permission of instructor.
Modern Language Humanities/ML

111-4, 112-4, 113-4, 114-4, 115-4 Modern Languages-Humanities
Study of selected cultures according to language distinctions, with emphasis on their uniqueness within the family of nations. 111 French culture. 112 Germanic culture. 113 Spanish culture. 114 Spanish-American culture. 115 Russian culture.


399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of modern languages. Topics vary from quarter to quarter.

Motion Pictures/TH

131-4 Film Appreciation
Introduction to film appreciation and analysis; examines critical approaches to film and film style, including authorship and genre.

180-3 Film Production I
Introduction to the basic elements of film production, including scripting, cinematography, editing, and sound. Participation on super-8 film projects from initial conception to final screening.

181-3, 182-3, 183-3 Elementary Film Projects
Production of short film projects under faculty supervision. Review of basic film techniques; introduction to some advanced film production techniques. Includes writing of film treatment and shooting script, and shooting and finishing a complete film. Prerequisite: TH 180.

231-3 History of the Motion Picture I
Historical development of the art of film from nineteenth-century scientific experiments through end of silent era. Examination of technical, social, economic, and cultural factors that have shaped film art.

232-3 History of the Motion Picture II
Historical development of the art of the film from beginning of the sound era to the mid-fifties. Consideration of both American and European film and relation of films to sociocultural conditions.

233-3 History of the Motion Picture III
Historical development of the art of the film from beginning of mid-fifties to the present. The decline of the studio system, major film movements of the sixties, and the rise of independent feature production are considered.

281-3, 282-3, 283-3 Intermediate Film Projects
Production of medium length film projects under faculty supervision. Review of lip sync film production techniques and discussion of special production problems. Includes writing of film treatment and shooting script, and shooting and finishing a medium length film. Prerequisite: for 281, TH 183; for 282, TH 281; for 283, TH 282.

331-3 Studies in Film History
Courses offered under this title provide intensive study of selected areas of film history. Specific title announced each time course is offered.

332-3 Studies in Film Authorship
Courses offered under this title provide an intensive study of the work of one or more film directors or other creative personnel, such as screenwriters or performers. Specific title announced each time course is offered. Prerequisite: TH 131 or permission of instructor.

333-3 Studies in Film Genre
Courses offered under this title provide an intensive study of a film genre, e.g., the Western, the musical, the gangster film. Specific title announced each time course is offered.

334-3 History and Theory of the Documentary Film
Comprehensive survey of the history of documentary film and an introduction to the theories and approaches used by documentary filmmakers throughout this century. Prerequisite: TH 131.

381-3, 382-3, 383-3 Advanced Film Projects
Production of 16mm film projects under faculty supervision. Review of budgeting, financing, and production. Emphasis on the documentary, business, and industrial film within the free-lance 16mm market. Prerequisite: for 381, TH 283; for 382, TH 381; for 383, TH 382.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of motion pictures.

435-3 Studies in Film Criticism
Intensive examination of a selected area of film criticism. Specific title announced each time course is offered. Permission of instructor required.
**Music/Courses**

**436-3 Studies in Film Production**
Courses offered under this title provide an intensive study of a selected area of film production. Specific title announced each time course is offered. Permission of instructor required. Prerequisite: TH 180. (Previously listed as TH 385.)

**481-3 Senior Practicum in Filmmaking**
Requires production of a 16mm sound film to answer print stage with optical soundtrack, and the organization of a cumulative senior screening including the practicum films. Required of motion pictures B.F.A. candidates. Senior standing required. Prerequisite: TH 381.

**499-1 to 4 Independent Study in Film History, Theory, Criticism, and Practice**
Independent work to culminate in thesis and/or film. Senior standing required. Departmental approval of student proposal required in quarter prior to registration. Prerequisite: TH 332, 333.

**Music/MUS**

**Applied Music**
Private instruction is offered in the following fields of concentration. Subject to the regulations of the college in which the student is registered, each half-hour lesson per week may carry one or two credit hours per quarter at the undergraduate level, depending upon the level of proficiency demonstrated by the student. All nonmusic majors, as well as music majors, must receive departmental approval before registering in applied music.

- **100-1, 2, or 4 Piano**
- **110-1, 2, or 4 Voice**
- **120-1, 2, or 4 Clarinet**
- **130-1, 2, or 4 Flute**
- **140-1, 2, or 4 Trumpet**
- **150-1, 2, or 4 Trombone**
- **160-1, 2, or 4 Organ**
- **170-1, 2, or 4 French Horn**
- **180-1, 2, or 4 Violin**
- **190-1, 2, or 4 Viola**
- **200-1, 2, or 4 Cello**
- **210-1, 2, or 4 String Bass**
- **220-1, 2, or 4 Oboe**
- **230-1, 2, or 4 Bassoon**
- **240-1, 2, or 4 Saxophone**
- **250-1, 2, or 4 Baritone Horn**
- **260-1, 2, or 4 Tuba**
- **270-1, 2, or 4 Percussion**
- **280-1, 2, or 4 Harpsichord**
- **290-1, 2, or 4 Classical Guitar**
- **300-1 to 2 Viola da Gamba**

**131-1 Beginning Guitar Class I**
Focuses on the development of good playing habits through melody and chord playing. Tuning, care of the guitar, and tablature reading covered, various guitar styles demonstrated. Students provide own instruments. Electric guitars not suitable.

**132-1 Beginning Guitar Class II**
Based on technique covered in MUS 131, this class concentrates on note-reading, more chords, and accompaniment styles. Prerequisite: MUS 131 or permission of instructor.

**133-1 Beginning Guitar Class III**
Based on technique covered in MUS 132, this class concentrates on note-reading, more chords, and accompaniment styles, and some aspects of theory. Prerequisite: MUS 132 or permission of instructor.

**155-1, 156-1, 157-1 Class Piano**
Class instruction. Must be taken in sequence.

**255-1, 256-1, 257-1 Class Piano**
Class instruction. Continuation of MUS 157. Must be taken in sequence.

**261-2, 262-2, 263-2 Pronunciation of Foreign Languages**
For students of singing. Application of the International Phonetic Alphabet to Italian, French, and German. Includes intensive readings of song lyrics. Must be taken in sequence.

**420-3 Opera Production and Coaching**
For advanced singers in the production of opera; culminates in public performance. Individual coaching for major role assignment. At the discretion of the instructor, course requirements may include participation in Dayton Opera productions. Permission of instructor required.

**441-1, 442-1 Pedagogy**
Fundamental problems involved in studio teaching. Critical analysis of teaching materials. Observation and practice in private teaching required. Must be taken in sequence. Senior standing in applied music required.

**447-3 Piano Pedagogy I**
Group instruction for the keyboard with particular emphasis on the electronic piano laboratory. Study is divided into three categories: pre-school, elementary school-age children, and college-level functional piano. Prerequisite: MUS 122, 203, 253 or permission of instructor.
448-3 **Piano Pedagogy II**  
Survey of piano methods and materials for early elementary (ages four through five), elementary (ages six through seven), average (ages eight through nine), and older beginning piano students; discussion of principles and problems of private piano teaching. Prerequisite: MUS 122, 203, 253 or permission of instructor.

449-3 **Piano Pedagogy III**  
Continuation of MUS 448. Prerequisite: MUS 122, 203, 253 or permission of instructor.

**Ensembles**  
Wright State staff and students, not majoring in music, may enroll with or without credit. Enrollment open to all students in the university.

105-1 **University Chorus**  
Audition required.

115-1 **University Band**  
Audition required.

125-1 **University Jazz Ensemble**  
Audition required.

135-1 **University Orchestra**  
Audition required.

175-1 **University Women's Glee Club**  
Audition required.

185-1 **University Men's Glee Club**  
Audition required.

195-1 **University Chamber Singers**  
Audition required.

205-1 **Chamber Music**  
Audition required.

235-1 **University Brass Choir**  
Audition required.

245-1 **Collegium Musicum**  
Collegium musicum is the generic term for an instrumental and vocal ensemble devoted to the study and performance of early music that was written before 1750. One period (Medieval, Renaissance, or Baroque) is emphasized each quarter. Prerequisite: MUS 121, 151, or audition.

**Theory of Music**

101-3, 102-3, 103-3 **Theory of Music**  
Theoretical study of music including written exercises, form and analysis, and harmony. Required of all music majors, but open to all students of the university. Must be taken in sequence. Corequisite: MUS 151, 152, 153.

116-1 **Introduction to the Theory of Music**  
Remedial course for first-year music majors. Cannot be applied toward music degree. Open to all students in the university.

151-1, 152-1, 153-1 **Sight Singing and Dictation**  
Must be taken in sequence. Corequisite: MUS 101, 102, 103.

201-3, 202-3, 203-3 **Music Theory**  
Continuation of MUS 101, 102, 103. Part-writing, analysis, and harmony on a more advanced level. Must be taken in sequence. Prerequisite: MUS 103, 153. Corequisite: MUS 251, 252, 253.

251-1, 252-1, 253-1 **Sight Singing and Dictation**  
Continuation of MUS 151, 152, 153. Must be taken in sequence. Prerequisite: MUS 103, 153. Corequisite: MUS 201, 202, 203.

301-3 **Baroque Counterpoint**  
Prerequisite: MUS 203, 253.

302-3 **Renaissance Counterpoint**  
Prerequisite: MUS 203, 253.

303-3 **Twentieth-Century Counterpoint**  
Prerequisite: MUS 203, 253.

351-3, 352-1, 353-1 **Advanced Sight Singing and Dictation**  
Must be taken in sequence. Prerequisite: MUS 202, 253.

371-3, 372-3, 373-3 **Composition**  
Creative writing in smaller forms for a variety of media. Includes the exploration of various composition styles. Must be taken in sequence. Prerequisite: for 371, MUS 203.

381-3, 382-3, 383-3 **Electronic Music Composition**  
Composition using electronically generated and manipulated sounds. Includes an historical survey of styles and an exploration of tape and synthesizer techniques. Must be taken in sequence. Prerequisite: for 381, MUS 373.

401-3 **Form and Analysis**  
Harmonic and formal analysis: motive, phrase, periods, binary and ternary forms. Prerequisite: MUS 203, 253, 313.

402-3 **Form and Analysis**  
Contrapuntal techniques, rondo, sonata-allegro forms. Prerequisite: MUS 401.

403-3 **Form and Analysis**  
Contrapuntal techniques and analysis of twentieth-century music. Prerequisite: MUS 203, 253, 313.

421-1, 422-2, 423-2 **Orchestration**  
Tone quality and ranges of orchestral instruments, voice qualities and ranges of choral ensembles; written assignments in each area. Must be taken in sequence. Prerequisite: MUS 203, 253.

424-3 **History of Music Theory**  
A survey of music theory from Jean Philippe Rameau to the present. Traces lines of thought which have had significant influence on musical study in the twentieth century. Prerequisite: MUS 203, 313.

425-3 **Senior Theory Seminar**  
In-depth study of selected topics in music theory. Course requires individual faculty-directed projects, culminating in a class presentation and a research paper. Prerequisite: MUS 403.
Advanced Composition: Creative writing, encompassing a variety of media and forms. Includes style exploration and the development of a personal style. Must be taken in sequence. Prerequisite: MUS 373.

Piano Literature: Historical survey of music for piano from origins in clavichord and harpsichord in the Renaissance through the twentieth century. Junior or senior standing with piano as major or concentration, or permission of instructor required.

Vocal Literature: Survey of vocal literature from the eighteenth through the twentieth century, emphasizing German lieder, French melody, English and American art songs, opera and oratorio. For music majors. Prerequisite: MUS 313.
Conducting (Choral and Instrumental)
Basic baton technique for choral and instrumental conducting. Choral score and instrumental score reading. Two quarters of laboratory ensemble required. Prerequisite: MUS 122, 203, 253.

Advanced Choral Conducting
Continuation of MUS 335. Emphasis on rehearsal techniques, comprehensive musicianship, and performance practices. For music majors. Choral laboratory ensemble required. Prerequisite: MUS 335.

Advanced Instrumental Conducting
Continuation of MUS 335. Emphasis on rehearsal techniques, comprehensive musicianship, and performance practices. For music majors. Instrumental laboratory ensemble required. Prerequisite: MUS 335.

Introduction to Music Education for the Special Learner
Materials, techniques, curriculum for teaching music to the special learner in public/private school music programs. Prerequisite: MUS 122, 203, 253, or 365 and permission of instructor.

Seminar in Music Education for the Special Learner
Planning, implementing, and evaluating music-teaching techniques with special learners. Participation experiences with groups of special learners. Prerequisite: MUS 365 and permission of instructor; or MUS 435 (MUS 435 may be taken concurrently).

Practicum in Music Education for the Special Learner
A supervised teaching experience with special learners. Emphasis is on sequential musical activities that meet each student's needs. Prerequisite: MUS 365 and permission of instructor, or MUS 436 (MUS 436 may be taken concurrently).

Music for Nonmajors
Music Listening I
Historical survey of Western art music from the Middle Ages through the Baroque period (1750).

Music Listening II
Historical survey of Classical and Romantic period music (1750-1900).

Music Listening III
Historical survey of Western art music of the twentieth century.

Fundamentals of Music Theory
Study of basic materials, notation, and reading of music for students with little or no previous music training.

Music Listening IV: Jazz
Historical survey of jazz and related styles from the late nineteenth century to the present.

Popular Musical Theatre
Survey of popular musical theatre from its origin in classic comic opera to the present. Emphasis on the Broadway musical since the 1940s.

Singing in Musical Theatre
Basic music, interpretation of notation. Vocal training with emphasis on musical theatre. Must be taken in sequence. For theatre majors only.

Fundamentals of Music for the Classroom Teacher
Functional music emphasizing keyboard, recorder, and sight-singing. Enrollment limited to elementary education majors.

Music in the First Six Grades
Methods and materials for teaching elementary general music. Enrollment limited to elementary education majors. Prerequisite: MUS 165.

Special Studies in Music
Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of music.

Workshops in Music
Study of selected special topics or problems in music or special areas of music teaching. Titles announced for each workshop. Senior standing in music required.

Advanced Studies in Special Subjects
Directed research, open to properly qualified upperclass and special students. Permission of department chair required.

Nursing/NUR
All of the following courses require admission to the School of Nursing. Course levels must be taken in sequence.

Nursing Elective
Special topics. May be repeated.

The Health Care System: Its Impact on Professional Nursing
Introductory course oriented toward the role and function of the professional nurse within the health care system, as influenced by social forces.
211-4 Scientific and Nursing Concepts and Theories
Concepts and theories from the arts, sciences, and nursing are discussed in terms of their significance to the practice of professional nursing. The integration and synthesis of various theories, as well as an orientation to the program’s philosophy and conceptual framework, are included. Prerequisite: ANT 201, 202; BIO 112; CHM 101, 102; ENG 111, 112; M&I 220; PHS 218, 219; PSY 111, 112; SOC 111, 112. Prerequisite or corequisite: NUR 205.

304-3 Foundations of Nursing Research
Designed to introduce the junior-level nursing major to the basic elements of the research process, including aspects of statistics. Emphasis on the relation of research findings to professional nursing practice and the nursing process. Prerequisite: NUR 211. Prerequisite or corequisite: NUR 311.

308-5 Introduction to Professional Nursing
Introductory course oriented toward the role and function of the professional nurse. Emphasis is on concepts and theories within the sciences, humanities, and nursing which relate to the practice of professional nursing. For registered nurses only. Admission to the Registered Nurse/Bachelor of Science in Nursing degree program completion track required.

309-6 Nursing Process: Optimum Health
Clinical nursing course. Focuses on the ability of individuals and families to adapt to their environment in relation to their optimum state of health. Nursing process is the foundation of the course. For registered nurses only. Prerequisite: NUR 308. BCH 340. SOC 360.

310-4 Nursing Process: Impaired Health
Nonclinical nursing course. A conceptual approach to understanding man’s reaction to impaired health throughout the lifespan. For registered nurses only. Prerequisite: NUR 309.

311-9, 312-9, 313-9 Nursing Process: Human Existence and Health I, II, III
Clinical nursing courses. Focusing on the nursing process and man’s ability to adapt to his environment in relation to his optimum state of health. Learning experiences include a variety of settings within and outside the health care system. Prerequisite: NUR 211.

317-2 to 4 Selected Topics
Special topics. May be repeated. Junior standing or permission of instructor required.

411-10, 412-10, 413-10 Nursing Process: Human Existence and Health IV, V, VI
Clinical nursing courses oriented toward man’s health potential and the practice of professional nursing. Social forces which affect the health care system are discussed in relation to their impact on professional nursing. Learning experiences emphasize independent practice and interdisciplinary activities in any environment where there is a client or patient. Prerequisite: NUR 313.

414-3 Nursing Elective
Special topics. May be repeated. Senior standing required. Prerequisite: NUR 313.

415-3 Independent Study
May be taken for letter grade or pass/unsatisfactory. Prerequisite: NUR 313.

498-3 Nursing Honors Seminar
Provides an opportunity for students to discuss selected problems, issues, and special topics related to nursing which are not covered in depth during the usual four-year curriculum. Students must identify an area of interest and develop a project proposal for in-depth study. Participation in Honors Colloquium required. May be taken for letter grade or pass/unsatisfactory. 3.2 minimum grade point average in student’s last forty-five credit hours required. Prerequisite: NUR 304, 312. Offered spring quarter only.

499-2 to 3 Nursing Honors Independent Study
Provides an opportunity for the development and completion of an honors project, using appropriate theories and concepts from the humanities, sciences, and nursing. With the guidance of a faculty member, the student focuses on an area of individual study. Participation in Honors Colloquium required. May be taken for letter grade or pass/unsatisfactory. May be repeated to a maximum of six credit hours. Prerequisite: NUR 498. Not offered spring quarter.

Office Administration/OA
201-3 Beginning Shorthand
Development of a vocabulary/writing skill in Gregg Series 90 shorthand. Permission of adviser required for students with shorthand skills.

202-3 Intermediate Shorthand
Continued vocabulary and writing skill development in Gregg Series 90 shorthand. Emphasis on dictation and ability to transcribe accurately. Prerequisite: OA 201 or equivalent proficiency; OA 211 or equivalent.
203-3 Advanced Shorthand
Emphasis on dictation and speed building in Gregg Series 90 shorthand. Introduction to transcription. Prerequisite: OA 202 or equivalent proficiency and permission of adviser.

210-3 Keyboarding
Basic keyboarding instruction in touch typing on an alphanumeric keyboard. Open to any student with less than one year of high school typewriting instruction or equivalent.

211-3 Beginning Typewriting
A mastery of the basic skills in touch typewriting. Typing of letters, reports, short tabulations, themes, manuscripts, and office memoranda. Open to any student with less than one year of high school typewriting instruction or equivalent. Prebusiness and office education majors with previous typewriting instruction may, with adviser's permission, take a proficiency examination.

212-3 Intermediate Typewriting
Development of speed and accuracy. Introduction to production typing of letters, reports, tabulations, and manuscripts. Two hours lab per week required. Prerequisite: OA 211.

213-3 Advanced Typewriting
Further development of speed and accuracy with emphasis on business letters, tabulation problems, business reports, and manuscripts. Introduction to typewritten transcription from office dictation equipment. Two hours lab per week required. Prerequisite: OA 212.

301-3 Beginning Transcription
Introduction to typewritten transcription from dictation. Prerequisite: OA 203, 212.

305-3 Office Machines
An introduction to adding machines, printing calculators, electronic calculators, duplicators, and their application to business problems. Teaching methods are also studied. Enrollment limited to students in business education and office administration.

401-1 to 3 Office Practicum
Designed to give the student valuable work experience in an actual office environment while being supervised/directed by college coordinator of business education. Junior or senior standing in office administration or business education required.

411-4 Office Management and Administration
Modern offices and their operating problems including human relations and principles and procedures of records management. Integrated and simulated exercises are implemented. Junior or senior standing in business education required.

Philosophy/PHL

111-4, 112-4, 113-4 Introduction to Philosophy
Classical and contemporary philosophy. 111: origin, structure, methods, certainty, and validity of knowledge. 112: metaphysical problems, including relationship between mind and body, freedom and determinism, and the nature of reality. 113: the nature of moral value and obligation. No sequence requirement.

115-4 Inductive Logic
Introduction to the techniques of inductive and probabilistic reasoning with special emphasis on the problems encountered in attempting to justify those techniques.

123-4 Deductive Logic
Introduction to the techniques of deductive logic, including truth-table analysis, the propositional calculus, and predicate logic.

124-4 Social Ethics and Values
Investigation of fundamental ethical issues in our society. Includes such issues as power, law, race, war, population, ecology, violence vs. pacifism, and punishment vs. rehabilitation.

280-4 Philosophy of Religion: Faith and Reason
(Listed jointly with Department of Religion; see REL 280.) Selected cross-disciplinary issues arising from philosophy and religion. Judeo-Christian concept of God, grounds for belief and disbelief, revelation and faith, religious language, verification, immortality and resurrection, karma and reincarnation. Issues are discussed on the basis of selected texts on faith and reason.

301-4, 302-4, 303-4 History of Philosophy
301: pre-Socratic philosophers, Plato and Aristotle; epicureanism, stoicism, skepticism, neoplatonism, and early medieval philosophy; 302: medieval and Renaissance philosophy; Descartes, Spinoza, and Leibniz. 303: Locke, Berkeley, Hume, Kant, Hegel, Schopenhauer, Nietzsche, logical positivism, process philosophy, and existentialism. No sequence requirement.

305-4 American Philosophy
Survey of American philosophy from Jonathan Edwards to John Dewey, including transcendentalism (Emerson, Thoreau), idealism (Royce), pragmatism (Peirce, James), and naturalism (Santayana, Dewey).

308-4 Survey of Analytical Philosophy
Major developments in last hundred years from Frege and early views of Moore and Russell; through logical atomism (Russell, Wittgenstein) and logical positivism (Shlick, Carnap, Ayer); to more recent views of such figures as Wittgenstein and Quine. Prerequisite: PHL 111, 112; or 123; or permission of instructor.
311-4 Ethics
Critical examination of major issues and problems of contemporary philosophical ethics. Concepts of "good," "evil," "right," "wrong," and "justice." Obligations to ourselves and others; praise, blame, punishment, and pardon; meaning and purpose of life.

312-4 Moral Problems
Investigation and discussion of moral issues as they arise within major areas of society. Emphasis on studies in such areas as medicine, law, family, business, and politics. May be repeated.

322-4 Philosophical Logic
Concepts which border the philosophy of language, philosophy of mind, and ontology. Sample topics: predication and universals; naming, meaning, and necessity; negation, existence, and truth; logical and semantical paradoxes. Prerequisite: PHL 123 or permission of instructor.

323-4 Symbolic Logic
Standard notations, principles of inference, formal systems, methods of proof. Focus on first-order predicate logic. Completion of three credit hours of deductive logic or permission of instructor required.

331-4 Political Philosophy
Analysis of classical and contemporary writings in political philosophy. Includes such topics as power, sovereignty, the state, and anarchy; equality, justice, law, and liberty; consent, representation, will of the people; political rights and responsibilities.

332-4 Studies in Political Philosophy
Course of variable content dealing with topics in ancient and modern political philosophy. May be repeated.

341-4 Aesthetics
Study of theories concerning the nature of the work of art, aesthetic experience, the arts, and beauty.

349-4 Asian Religious Philosophy
Perennial themes in Asian cultures (such as individual, society, and cosmos: appearance and reality; time and history; karma, freedom, and responsibility) as they have been treated in the philosophical traditions of these cultures.

351-4 Great Scientists and Recent Philosophy: Darwin, Marx, Freud, Einstein
Examination of philosophical importance of the theories of evolution, psychoanalysis, dialectical materialism, and space-time relativity.

371-4 Business Ethics
Case study and discussion of ethical issues involved in business transactions and management.

378-4 Ethics and Medicine
(Listed jointly with Department of Religion; see REL 378.) Examination of ethical issues confronting society in the areas of medicine and health care. From the perspective of philosophical and theological ethics. Examples include ethics of abortion, euthanasia, experimental medicine, and behavior control.

381-4 Philosophy of Religion: Contemporary Western Survey
(Listed jointly with Department of Religion; see REL 381.) Cross-disciplinary perspective on philosophical and religious schools of thought in the early twentieth century. Absolute and personal idealism, spirit, value, positivism and naturalism, history and culture, modernism and pragmatism, religious consciousness and phenomenology.

382-4 Philosophy of Religion: Process
(Listed jointly with Department of Religion; see REL 382.) Realism and the revolt against idealism. Cross-disciplinary analysis of a major contemporary philosopher and the implications of his thought for religion. Focus on Alfred North Whitehead.

383-4 Philosophy of Religion: Secular
(Listed jointly with Department of Religion; see REL 383.) Cross-disciplinary analysis of modes of human awareness through which religious meaning is expressed (sensation, morality, beauty, reason, human relations). Examination of presuppositions of contemporary secular religion in existentialism.

394-4 Existentialism
(Listed jointly with Department of Religion; see REL 394.) Representative writers of the existentialist movement.

399-1 to 4 Studies in Selected Subjects
Courses of variable content dealing with problems, approaches, and topics in the field of philosophy.

401-3 Major Philosophers
Introduction to the major writings of outstanding philosophers. Involves presentation and critical examination of the philosophers' views. May be repeated.

411-4 Advanced Ethical Theories
Critical examination of major theories of value and obligation. The best theory of value and obligation: assessment and measurement of values; the role of values in deliberation and decision making, and in explanations of behavior. Prerequisite (at least one of the following): PHL 113, 124, 311, or 312.

415-4 Philosophical Problems
Detailed examination of one of the outstanding philosophical problems—ancient, medieval, and/or contemporary. May be repeated.
423-4 **Advanced Logic**
(Listed jointly with Department of Mathematics and Statistics; see MTH 423.) Treats logic as object rather than as subject. Emphasis on use of logic and on limitations of logical systems. Prerequisite: PHL 123 and 323, or one of these together with one mathematics course beyond calculus, or permission of instructor.

424-4 **Mathematical Philosophy**
Investigation of philosophical theories concerning the nature of mathematics, the ground of mathematical knowledge, the necessity of mathematical truth, the empirical relevance of mathematics, and the relationships between mathematical philosophy and general philosophy. Prerequisite: PHL 123 or permission of instructor.

425-4 **Philosophy of Language**
Discussion of basic topics and issues. The limits of meaningful discourse. Aspects of meaning—literal, metaphorical, conversational; contemporary theories of meaning.

431-4 **Classical and Medieval Political Philosophy**
(Listed jointly with Department of Political Science and Urban Affairs; see PLS 401.) Critical examination of political ideas from 500 B.C. to A.D. 1500 with special attention to Plato, Aristotle, Cicero, St. Augustine, St. Thomas Aquinas, Luther, Calvin, and Machiavelli.

442-4 **Philosophy of Literature**
Examination of theories concerning the subject matter, function, nature, and goals of literature.

465-4 **Advanced Analysis**
Investigation of certain problems and attempted solutions that have occupied major contemporary Anglo-American philosophers such as Moore, Russell, Wittgenstein, Carnap, Ryle, Austin, Strawson, and Quine. Prerequisite: PHL 111, 112; or 123; or permission of instructor.

467-4 **Philosophy of Mind**
Classical and contemporary approaches to such issues as the nature of mind, relationships of mind to body, knowledge or other minds, intentionality, perception, and agency. Prerequisite: PHL 111 or 112 or permission of instructor.

471-4 **Philosophy of Physical Science**
Analysis of views concerning scientific explanation, the logic of theory testing, and the ontological status of theoretical entities; philosophical examination of the concepts of "space," "time," "matter," and "motion" from classical physics to contemporary relativity. Prerequisite: PHL 115 or permission of instructor.

472-4 **Philosophy of Social Science**
Analysis of views concerning concept and theory formation in the social sciences, problems in objectivity and value, justification of Verstehen, mechanism vs. teleological explanations, and reductionism. Prerequisite: PHL 115 or permission of instructor.

481-3 to 4, 482-3 to 4, 483-3 to 4 **Independent Reading**
Faculty-directed readings in philosophic literature. A written proposal which has departmental approval is required prior to enrollment.

495-4 **Metaphysics**
Investigation of classical and contemporary attempts to develop a theory of the nature of being and reality. Prerequisite: PHL 111 or 112 or permission of instructor.

496-4 **Epistemology**
Origin, certainty, and extent of human knowledge. Prerequisite: PHL 111 or 112 or permission of instructor.

**Physics/PHY**

101-1.5, 102-1.5, 103-1.5 **Principles of Physics Laboratory**
Introductory-level laboratory problems. Corequisite: for 101, PHY 111; for 102, PHY 112; for 103, PHY 113.

111-3, 112-3, 113-3 **Principles of Physics**
Introduction to fundamental phenomena, principles, and laws of physics. Prerequisite: for 111, MTH 128 or 129, or equivalent; for 112, PHY 111; for 113, PHY 112. Corequisite: for 111, PHY 101; for 112, PHY 102; for 113, PHY 103.

121-3 **From Apples to Spaceships**
Evolution of science and scientific world view studies by tracing development of mechanics and energy concepts from Galileo and Newton through Einstein. Application to space travel, relativity, and other topics of current interest. Laboratory is listed as PHY 131.

122-3 **The Nuclear Atom**
Microscopic structure of matter, from the atomic theory applied to gases and crystals to the underlying structure. Topics include electricity—atomic glue, quantum theory and atoms, the nucleus and nuclear energy, and fundamental particles. Laboratory is listed as PHY 132.

123-3 **Suns, Moons, and Planets**
Introduction to astronomy with emphasis on the solar system. Topics include the earth-moon system, other planets and their satellites, space exploration, and theories for the origin of the solar system. Laboratory is listed as PHY 133.
124-3 Lights, Colors, and Sounds
Wave motion is studied, with orientation toward examples of light and sound, such as musical sounds, noise, and colors occurring in nature. Laboratory is listed as PHY 134.

125-3 Stars, Galaxies, and the Universe
Introduction to astronomy with emphasis on the universe of stars and galaxies. Topics include stellar evolution, galaxies: origin and evolution of the universe, astrophysics. Laboratory is listed as PHY 135.

131-1 Apples to Spaceships Laboratory
Experiments designed to illustrate the methods of scientific investigation. Lab component of PHY 121 for students wishing to use course to meet General Education science requirements.

132-1 The Nuclear Atom Laboratory
Experiments stress the relationship of everyday phenomena to basic physical principles. Lab component of PHY 122 for students wishing to use course to meet General Education science requirements.

133-1 Sun, Moons, and Planets Laboratory
Astronomical observations and experiments. Lab component of PHY 123 for students wishing to use course to meet General Education science requirements.

134-1 Lights, Colors, and Sounds Laboratory
Experiments to illustrate the physical aspects of what we see and hear. Lab component of PHY 124 for students wishing to use course to meet General Education science requirements.

135-1 Stars, Galaxies, and the Universe Laboratory
Astronomical observations, laboratory experiments, and a visit to the planetarium. Lab component of PHY 125 for students wishing to use course to meet General Education science requirements.

150-1.5, 151-1.5, 152-1.5 Contemporary Concepts in Physics
Modern physics: emphasis on recent developments. Topics range from astrophysics to molecular and nuclear physics. Graded pass/unsatisfactory.

200-1 General Physics Laboratory

201-1 General Physics Laboratory

202-1 General Physics Laboratory

210-3 General Physics
Selected topics in mechanics: introduces use of calculus in interpretation of physical phenomena. Prerequisite: PHY 112, 113, MTH 133.

211-3 General Physics
Selected topics in electricity and magnetism: introduces use of calculus in interpretation of physical phenomena. Prerequisite: PHY 112, 113; MTH 133.

After successfully completing PHY 111, 112, 113, and PHY 210 and 211, students may take courses for which PHY 240, 241, 242 are prerequisite.

214-3 Energy Production: Alternative Solutions
Basic energy concepts and physical processes by which natural resources are converted to useful energy. Physical principles will be introduced as needed. Recommended preparation: ENV 211. Prerequisite: MTH 102 or equivalent.

240-4 General Physics
Introductory survey of mechanics for science and engineering students. Introduces the use of calculus in interpreting physical phenomena. Topics include vectors, kinematics: dynamics, energy, momentum, rotation, and statics. 3 hours lecture, 1 hour recitation. Corequisite: PHY 200, MTH 132.

241-4 General Physics
Introductory survey of thermodynamics, oscillations and waves: sound, fluids, and gravity. Uses calculus in interpreting physical phenomena. 3 hours lecture, 1 hour recitation. Prerequisite: PHY 240, MTH 132. Corequisite: PHY 201, MTH 133.

242-4 General Physics
Introductory survey of electricity and magnetism. Uses calculus in interpreting physical phenomena. Topics include electric field and potential: currents, D.C. circuits, magnetic fields, and Faraday's Law. 3 hours lecture, 1 hour recitation. Prerequisite: PHY 240, MTH 133. Corequisite: PHY 202.

243-2 General Physics
Introductory survey of optics. Topics include lenses, mirrors, optical instruments, interference, diffraction, and lasers. Laboratory work is included. 1.5 hours lecture, 1 hour lab. Prerequisite: PHY 113 or 241.
### 260-4 Introduction to Modern Physics
- Elementary introduction to phenomenology and theoretical concepts of modern physics. Special theory of relativity and quantum theory. Atomic and molecular structure and spectra. X rays and solid state physics. Nuclear structure, reactions, natural radioactive. Instrumentation for nuclear physics research. One hour is devoted to demonstrations and recitations. Prerequisite: PHY 210 and 211, or 242; MTH 133.

### 260-3 Introduction to Photography
- Develops an understanding of optical and photographic processes, and the techniques necessary to control this medium for a wide range of uses of photography. 1 hour lecture, 4 hours lab. Graded pass/unsatisfactory.

### 300-3 Properties of Semiconductor Materials
- Crystal structure and growth, quantum theory and atomic structure, energy bands in solids, charge carriers and thermodynamic equilibrium, generation and recombination of excess charge carriers, diffusion, and junctions. Prerequisite: PHY 242.

### 301-3 Semiconductor Device Physics
- Bipolar junction transistors, p-n junction diodes, field effect transistors, integrated circuits. Other semiconductor devices, and fabrication of semiconductor devices. Prerequisite: PHY 300.

### 314-2 to 3 Intermediate Physics Laboratory
- Intermediate-level laboratory problems. Acquaints students with wide variety of experimental techniques in many areas of classical and modern physics. May be repeated. Prerequisite or corequisite: PHY 260 or permission of instructor.

### 315-3 Physics Instrumentation Laboratory I
- Physics laboratory experiments with an emphasis on electrical measurements and electronic instruments. Lectures on circuit theory, experiment design, and electronic instruments. 1.5 hours lecture, 3 hours lab. Prerequisite or corequisite: PHY 260 or permission of instructor.

### 316-3 Physics Instrumentation Laboratory II
- Experiments emphasizing electronic instruments applied to areas such as mechanics, atomic physics, and nuclear physics. Lectures on applications of integrated circuits to experimentation, data analysis, and data presentation. 1.5 hours lecture, 3 hours lab. Prerequisite: PHY 315.

### 322-4 Applied Optics
- Study of optical instruments by means of both geometrical and physical optics. Theory and application of interferometry and light detection devices. Brief introduction to lasers and holography. 3 hours lecture, 2 hours lab. Recommended preparation: PHY 260. Prerequisite: PHY 243 or equivalent; MTH 253.

### 332-3 Lasers
- Introduction to the physics of lasers including emission and absorption processes in lasing, the factors controlling laser gain, the properties of optical resonators, and a survey of salient features for principal types of lasers. Prerequisite: PHY 243, 260; or CHM 121; or permission of instructor.

### 371-3, 372-3 Analytical Mechanics
- Intermediate problems in statics, kinematics, and dynamics; equilibrium of forces, rectilinear motion, curvilinear motion, central forces, constrained motion, energy and moments of inertia, the Lagrange method. Prerequisite: PHY 210, 211, or 242. Corequisite: MTH 233.

### 400-3 Introduction to Solid Earth Geophysics
- (Listed jointly with Department of Geological Sciences; see GL 400) The basics of seismic, gravimetric, magnetic, and heat conduction principles as used to determine the geophysical properties of the solid earth. Emphasis is on the deeper parts of the crust, the mantle, and the core. Junior standing required. Prerequisite: MTH 132.

### 420-3 Thermodynamics
- First and second laws of thermodynamics; general thermodynamic formulas with applications to matter. Prerequisite: PHY 210, 211 or 242.

### 421-3 Statistical Thermodynamics

### 422-5 Introduction to Geophysical Prospecting
- (Listed jointly with Department of Geological Sciences; see GL 422.) Introduction to principles of gravity, magnetic, seismic, electrical, and radioactive prospecting. 4 hours lecture, 2 hours lab. Junior standing or permission of instructor required. Prerequisite: MTH 132.

### 423-4 Seismic Exploration
- (Listed jointly with Department of Geological Sciences; see GL 423.) Study of the theory, observation, and analysis of seismic phenomena as applied to geologic exploration. 4 hours lecture, 2 hours lab. Prerequisite: PHY 422, MTH 231; or permission of instructor.

### 424-4 Gravity Exploration
- (Listed jointly with Department of Geological Sciences; see GL 424.) Study of the theory, observation, and analysis of gravitational phenomena as applied to geologic exploration. 3 hours lecture, 2 hours lab. Prerequisite: PHY 422 or permission of instructor.
425-4 Topical Concepts in Geophysics
(Listed jointly with Department of Geological Sciences; see GL 425.) Special topics in geophysics. 3 hours lecture, 2 hours lab. Prerequisite: PHY 400 or 422 or permission of instructor.

426-1 Geophysics Seminar
(Listed jointly with Department of Geological Sciences; see GL 426.) Literature survey and student presentations on selected topics in geophysics. May be repeated. Prerequisite: PHY 400 or 422.

430-2 to 4 Electronics
Basic theory and application of transistors and integrated circuits in present-day circuitry as found in research instrumentation. Prerequisite: PHY 242 or equivalent.

437-4 Seismic Data Processing
Digital filtering, deconvolution, and migration of seismic data. Prerequisite: PHY 423.

442-4 Physical Optics
Interaction of light and matter, interpretation of these phenomena using the electromagnetic wave theory of radiation. Topics include emission, absorption, scattering, polarization, interference, diffraction, coherence, and holography. Prerequisite: PHY 452, MTH 333.

450-3, 451-3, 452-3 to 4 Electricity and Magnetism
Fundamental laws of electricity and magnetism from viewpoint of fields. Maxwell's equations, transient and steady state currents, electric and magnetic properties of matter, electromagnetic radiation. Prerequisite: PHY 242, or 210 and 211; MTH 232, 233.

460-4 Introduction to Quantum Mechanics
Mathematical structure of quantum mechanics. Applications to selected one- and three-dimensional problems with emphasis on atomic structure. Prerequisite: PHY 260, 372; MTH 333.

461-4 Introduction to Solid State Physics
Selected properties of solids and their quantitative explanation in terms of simple physical models. Applications of quantum mechanics to solids. 3 hours lecture, 2 hours lab. Prerequisite: PHY 316, 460.

462-4 Introduction to Nuclear Physics and Relativity
Special theory of relativity. Nuclear radiation, nuclear properties, nuclear transformations and elementary particles and interactions. Prerequisite: PHY 460.

470-3 Selected Topics
Selected topics in physics. May be repeated. Departmental approval required. Prerequisite: PHY 372.

480-3, 481-3, 482-3 Introduction to Theoretical Physics
Introduction to classical theoretical physics. Emphasis on mechanics, electromagnetic field theory, mathematical techniques. Departmental approval required. Prerequisite: PHY 372, 452; MTH 333.

488-1 to 3 Independent Reading
May be repeated. Departmental approval required. Prerequisite: PHY 240, 241, 242, or equivalent

494-3 Senior Projects
Selected problems in experimental and theoretical physics with critical analysis of results. May be repeated. Senior standing in physics and departmental approval required.

499-3 Special Honors Research Problems
Special research in a recognized branch of physics, usually related to research carried on by the department. Critical analysis of results required. May be repeated. Senior standing in physics, enrollment in the physics honors program, and departmental approval required.

Physiology/PHS
Core Courses
218-5 Human Physiology I
First half of a basic course in human physiology. Subject areas include homeostasis, cell, nerve, and muscle function; nervous system regulation and integration; cardiovascular and circulatory function. 4 hours lecture, 2 hours lab. Prerequisite: ANT 201, 202; CHM 121; MTH 102.

219-5 Human Physiology II
Second half of a basic course in human physiology. Subject areas include metabolism, gastrointestinal, pulmonary, renal, and reproductive function; acid-base regulation; endocrine regulation; and integrative mechanisms. 4 hours lecture, 2 hours lab. Prerequisite: PHS 218 or permission of instructor.

403-4 Physiology of Disease
Inadequate or inappropriate physiological responses and their consequences are presented. Emphasis is on applications of physiological principles. Prerequisite: PHS 218, 219; BCH 250; M&I 220.

Additional Courses
488-1 Independent Reading in Physiology
This course enables qualified students to begin independent reading in the physiological literature. A written report is required for each registered period. May be repeated to a maximum of three credit hours. Junior standing and departmental approval required.
499-1 to 4 Special Problems in Physiology
A specialized program which gives seniors an opportunity to explore potential careers in physiology. Studies may vary from working with instructor on an ongoing physiological research project to analysis of data obtained from completed research project. May be repeated to a maximum of four credit hours. Senior standing and permission of instructor required. One student per instructor.

Polish/POL
111-4 Essentials of Polish
Introduction to Polish with an emphasis on speaking the language.

Political Science/PLS
110-4 Political Issues
Selected current domestic and international political issues; background information; analysis of importance; presentation of major alternative viewpoints; present stage of governmental action and policy on each issue; identification of information sources pertaining to each issue.

112-4, 113-4 American Politics and Government
112: the Constitution, public opinion, parties, elections, interest groups. 113: Congress, presidency, courts, bureaucracy. May be taken out of sequence.

122-4, 123-4 International Politics
122: basic factors influencing contemporary international interaction; techniques and patterns of international behavior. 123: intensive study of selected issues and trends, e.g., multipolarity, disarmament, peace keeping.

Advanced Courses
204-4 Modern Political Ideologies
Systematic analysis of the major political ideologies of the twentieth century, with particular attention to democracy, fascism, communism, and nationalism.

210-4 Introduction to Quantitative Methods of Political Science
Uses of quantitative political data with emphasis on contemporary research applications. Survey design and questionnaire construction. Analysis and interpretation of data. Prerequisite: MTH 102 or equivalent level on math placement test or permission of instructor.

225-4 City Politics
Governments and politics of metropolitan regions; government structure and functions; interest and power relations.

226-4 State Government
Survey and analysis of the structures and functions of the American states, with special attention to the problems of federal-state and state-local relations, legislative apportionment, and urban growth.

231-4 Political Parties
General functions, organization, and operation of American political parties. Special emphasis on role of parties in democratic systems. Nominations, elections, campaigns, presidential politics.

240-4 Law and Society
Theories of law; the nature and functions of the judicial process.

251-4 Western European Politics
Comparative study of the political systems of Great Britain, France, and West Germany.

271-4 Current World Problems
Various views and perspectives on selected contemporary problems and trends in international politics.

276-4 Peace Studies
The study of war and peace and current efforts in dealing with international conflict. Examines the roots of war in American society and alternative strategies for elimination of war as an instrument of policy.

284-4 Africa and the Modern World
International relations of African states south of the Sahara. Emphasis on inter-African state relations and African state relations with the rest of the world, especially the major powers.

305-4 Comparative Marxist Theory
Critical examination of the chief theories developed by Marx, Engels, Lenin, Stalin, Mao Tse-tung, Castro, and various revisionists. Emphasis on Soviet and Chinese ideologies.

306-4 The Marxist-Christian Dialogue
(Listed jointly with Department of Religion; see REL 306.) Examination and evaluation of the Marxist-Christian dialogue. Emphasis on such categories as hope, liberation, alienation, man, love, class struggle, transcendence, power, and change. Junior or senior standing or permission of instructor required.

310-4 Empirical Political Analysis
Scope and methods of empirical political research; concepts and hypotheses; explanation and prediction; methodological approaches to the study of politics and political behavior. Prerequisite: PLS 210, or introductory course in statistics, or permission of instructor.

326-4 Government of Ohio
Organization and functions of the government of Ohio, with special attention to development, social structure, legal status, electoral processes, and fiscal problems.
328-4 Political Aspects of Urban Development
Institutional and political context of planning: laws, governmental structures, and procedures; urban politics.

335-4 The American Presidency
General political functions, roles, and structure of the presidential office; limits and opportunities of presidential power; relations with Congress, courts, bureaucracy, the public, and the political party; presidential personality.
Recommended preparation: PLS 112, 113.

337-4 The Legislative Process

339-4 United States Health Policy
Critical review of important political, social, and economic causes and consequences of health policies in the United States.

340-4 Constitutional Law
Cases in which provisions of the Constitution have been judicially interpreted; federal systems; separation of powers; limits on government.

341-4 Civil Liberties
Cases and related materials on the Bill of Rights and the Fourteenth Amendment; emphasis on the First Amendment freedoms.

342-4 The American Criminal Justice System
Survey of the American criminal justice system, concentrating on political aspects. Police, judges, attorneys. Supreme Court decisions, crime, and public opinion.

345-4 Public Administration
Nature and scope of public administration; administrative law; public interest in the administrative process.

346-4 Public Personnel Administration
Methods of employment, training, compensation, and employee relations in various levels of civil service; organizations of public employees.

347-4 American Public Policy Analysis

352-4 Ethnic Politics
Comparison of ethnic identity and politics in Western societies, including the United States, Canada, Great Britain, and France. Topics include minorities and the welfare state, affirmative discrimination, and black politics in the United States.

354-4 Governments of Eastern Europe
Introduction to the governments and politics of Eastern Europe, particularly since World War II. Includes current development in Poland, Czechoslovakia, East Germany, Hungary, Rumania, Bulgaria, and Yugoslavia.

356-4 Politics and Society in France
Examines the historic interaction of French culture and politics. Topics include the growth of the French nation and state, French society, the nature of modern politics and institutions, and France's role in world affairs.

360-4 Politics of the Developing Nations
Comparative analysis of various problems, particularly political, confronting developing nations in nation building and development.

362-4 Political System of Japan
Analysis of the political structures and processes of Japan; special attention to the dynamic factors of socioeconomic development.

364-4 Contemporary African Politics
Political processes and governmental institutions of sub-Saharan Africa; special attention to dynamics of political development and social and economic change. Comparative analysis of selected African political systems.

366-4 Politics of the Middle East
Introduction to governments and politics of the Middle East with special attention to cultural and historical background and the Arab-Israeli conflict.

367-4 Political System of China: The People's Republic
Analysis of political structures and processes of Communist China; focus on dynamic factors of socioeconomic and political development.

370-4 International Theory
Study of recent findings in international politics. Explanations of world political developments such as war, alliance formation, and arms races.

372-4 International Organization
Analysis of developing structures and functions of the United States and other international organizations and concepts relating to world government.

380-4 American Foreign Policy
Role of the United States in contemporary international politics and the relationship of the domestic political system to that role. Discussion of current problems.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of political science.
232 Courses-Political Science

401-4 Classical and Medieval Political Thought
(Listed jointly with Department of Philosophy; see PHL 431) Critical examination of political ideas from 500 B.C. to A.D. 1500 with special attention to Plato, Aristotle, Cicero, St. Augustine, St. Thomas Aquinas, Luther, Calvin, and Machiavelli.

402-4 Political Thought: Hobbes to Mill
Critical examination of political ideas from 1600 to 1900, with special attention to Hobbes, Locke, Rousseau, Montesquieu, Hume, Burke, Hegel, Bentham, Marx, and Mill.

403-4 Twentieth-Century Political Thought
Critical examination of twentieth-century political theory. Emphasis on nature, methodology, evaluation, existing condition, and future of political thought.

407-4 Seminar in Political Theory
Readings, research, reports, and discussion on selected theorists, topics, and problems. Topics vary from quarter to quarter. Junior or senior standing or permission of instructor required.

411-4 Seminar in Methodology
Techniques and methods of research in political science, application to individual projects and research designs. Prerequisite: PLS 310 or equivalent level of familiarity with statistical techniques.

412-4 Topics in Empirical Political Analysis
Selected topics of methodological or analytical concern in contemporary political research. May be repeated once. Prerequisite: PLS 310 or permission of instructor.

425-4 Seminar in Metropolitan Studies
Intensive interdisciplinary treatment of metropolitan studies. Reading and discussion on pertinent theory, methodology, and case studies. Practical research by students. May be repeated once. Permission of instructor required.

427-4 Urban Policy Analysis
Study of selected urban problems and their relationship to the political environment. Use of simulation gaming to understand community development processes.

429-4 Urban Communications Theory
(Listed jointly with Department of Communication; see COM 429) Processes and institutions by which individuals and groups communicate in urban environment. Model of an urban communication system developed by interdisciplinary systems approach.

430-4 Seminar in American Politics and Government
Selected topics related to American political institutions and processes. Emphasis on readings, discussion, research. May be repeated once. Completion of twelve credit hours in American government and permission of instructor required.

433-4 Public Opinion
Opinion formation in American politics; relationship of opinion to public policy; voting behavior in American elections; role of mass media and political interest groups in policy process; development of political attitudes and values.

434-4 Political Leadership
Development of political attitudes and values among leaders, activists, and the public. Relationship between personality, political leadership, behavior, and policy.

443-4 Administrative Law Procedure
A study of the law controlling the process by which policy is made and administered by public agencies. Topics include policy formulation and budgeting, legislative delegation, administrative agencies, rule making, and adjudication. Junior standing required. Prerequisite: PLS 340, 345; or permission of instructor.

445-4 Comparative Public Administration
Emphasis on characteristics and roles of public bureaucracies in Western, non-Western, developing, and developed nations.

446-4 Public Budgeting
Examination of the major phases of the governmental budget cycle: types of budget, budgetary reform, economic and public policy impact of government budgeting, decision-making process, legislative-executive relations in budget formation and implementation.

447-4 Seminar in Public Administration
Selected national, state, and local problems; emphasis on legal scope of administrative power and on research methods used by staff agencies. Topics vary from quarter to quarter. Prerequisite: PLS 345 or permission of instructor.

449-4 Public Organization Theory
Theory of administration and decision making of public organizations, principal schools of thought, and impact of structure, behavior, and public policy. Prerequisite: PLS 345.

450-4 Political Institutions in Primitive Societies
(Listed jointly with Department of Sociology and Anthropology; see ATH 450) Study of that part of the culture of primitive societies which we recognize as political organization. An attempt is made to show how in less complex (primitive) societies new local communities come into being through fission. Senior standing and twelve credit hours of anthropology or permission of instructor required.
451-4 Comparative Government Policy
Examination of the differences in policy outcomes in relation to variations in governmental structure and political processes in West European political systems and the U.S.; policy areas examined include social welfare, taxation, civil rights, foreign policy.

453-4 Political System of the Soviet Union
Analysis of the Soviet system with emphasis on development of the Communist Party.

460-4 Seminar on Comparative Political Systems
Readings, research, reports, and discussion on selected topics and problems. Topics vary from quarter to quarter. Permission of instructor required.

470-4 Seminar in International Relations
Readings, research, reports, and discussion on selected topics and problems. Permission of instructor required.

471-4 International Law
Study of rules governing the conduct of international politics with emphasis on their relevance to current world problems.

486-4 Chinese Foreign Policy
Examination of policy dynamics and structures as well as external policies and international relations of the People's Republic of China.

490-1 to 4 Independent Reading
Supervised individual readings on selected topics. Arranged between student and faculty member directing the study. May be taken twice. Cannot be applied toward forty-eight credit hour departmental unit minimum. Junior or senior standing and permission of instructor required.

491-1 to 4 Independent Research
Supervised individual research on selected topics. Arranged between student and faculty member directing the study. May be taken twice. Cannot be applied toward forty-eight credit hour departmental unit minimum. Junior or senior standing and permission of instructor required.

492-1 to 4 Independent Field Experience
Supervised individual projects. May involve intern programs in local government or other special programs. May be taken twice. Cannot be applied toward forty-eight credit hour departmental unit minimum. Junior or senior standing and permission of instructor required.

493-1 to 4 Contemporary Problems
Advanced study in selected topics which frequently include new developments in the methodology or subject matter of the various subfields of the discipline. May be repeated for credit.

494-1 to 4 Special Topics
Study of particular political problems of contemporary significance. May not follow time patterns scheduled for regular courses. May be repeated for credit. Cannot be applied toward forty-eight credit hour departmental unit minimum.

Portuguese/POR

111-4 Essentials of Portuguese
Introduction to Portuguese with an emphasis on speaking the language.

Psychology/PSY

111-4 Introductory Psychology
Introduction to basic concepts in the study of behavior; emphasis on methods of psychology; physiological considerations, motivation, sensation and perception, learning and cognition.

112-4 Introductory Psychology
Introduction to basic concepts in the study of behavior; emphasis on statistics, psychological tests, development, personality, abnormal behavior, social psychology, and applied psychology.

200-2 to 4 Psychological Study of Contemporary Problems
Restricted psychological problem areas and their implications for modern society and modern intellectual thought. Topics vary from quarter to quarter. May be repeated. Prerequisite: PSY 111, 112.

201-4 Divorce: Current Perspectives
Survey of theory, current research, and methodological issues relating to the divorce process, the effects of divorce on children, and professional intervention. Prerequisite: PSY 111, 112.

202-4 The Psychology of Nonverbal Communication
Introduction to the perception of nonverbal sources of information and the impact on physical and cognitive behaviors. Prerequisite: PSY 111, 112.

203-4 Psychology of Health Behavior
Survey of the contributions of psychology of health care. The focus is both theoretical and practical, emphasizing the integration of physiological and psychological knowledge. (Previously listed as PSY 303.)

208-4 Environmental Psychology
Effects on behavior of environmental factors such as crowding, noise, pollution, temperature, lighting, and architecture. Applications of psychological knowledge and techniques in dealing with current environmental problems are also considered. (Previously listed as PSY 308.)
209-4 Behavior Modification  
Basic survey of the principles of conditioning as they relate to problems in human adjustment. The general principles of the psychology of learning are emphasized, but they are illustrated with cases of interest to a wide variety of helping professionals, e.g., psychologists, educators, social workers, nurses, and speech therapists. (Previously listed as PSY 309.)

210-4 Psychology of Women and Men  
Examines the current state of research evidence about sex differences in all aspects of human behavior, as well as patterns of public attitudes about the natures and proper roles of men and women. (Previously listed as PSY 310.)

Advanced Courses
PSY 111 and 112 are the minimum prerequisite for all advanced courses (300 and above).

300-5 Research Design and Methods  
Introduction to the design and execution of behavioral studies, including laboratory experiments and field observations. Laboratory exercises give students practice dealing with problems and data from a representative sample of areas within psychology. 3 hours lecture, 4 hours lab. Prerequisite: PSY 111, 112; STT 265. (Previously listed as PSY 315.)

304-4 Industrial and Organizational Psychology  
Scientific psychological principles, procedures, and methods applied to human behavior in organizations.

306-4 Engineering Psychology  
(Listed jointly with School of Engineering; see EGR 306.) Introduction to the study of human factors in the design and operation of machine systems.

307-4 Tests and Measurements  
Introduction to the construction and use of attitude scales, aptitude and ability tests in organizational settings with special emphasis on the utilization of standard tests.

311-4 Abnormal Psychology  
Overview of facts and theories pertaining to abnormal behavior. Topics include classification and diagnosis, causes and treatment of abnormal behavior. (Previously listed as PSY 305.)

321-4 Cognition and Learning  
Survey of cognitive processes, with emphasis on learning and memory systems. Topics include short-term memory, retrieval mechanisms, conceptual structures, and cognitive skills tests (e.g., IQ tests), mnemonic techniques, and amnesias.

323-4 Cognition and Learning Methods  
Laboratory research in various areas of cognitive psychology. 2 hours lecture, 4 hours lab. Prerequisite: PSY 300, 321.

331-4 Psychology of Personality  
Review of contemporary theories of personality and associated research methodology.

333-4 Personality Research Methods  
Laboratory experience in research techniques related to experimental personality. Problems of design with students expected to develop and implement a research proposal. 2 hours lecture, 4 hours lab. Prerequisite: PSY 300, 331.

341-4 Lifespan Developmental Psychology  
Survey of theory, research, and methodological issues in the study of development across the lifespan.

343-4 Developmental Psychology Methods  
Survey of research design appropriate to developmental analysis, innovations in developmental methodology, and laboratory experience in the selection, design, and analysis of developmental problems of specific interest to the individual student. 2 hours lecture, 4 hours lab. Prerequisite: PSY 300, 341.

351-4 Social Psychology  
Survey of current theories and experimental findings regarding the determinants of social behavior.

353-4 Social Psychology Methods  
Laboratory course in methods and problems involved in research in social psychology. 2 hours lecture, 4 hours lab. Prerequisite: PSY 300, 351.

361-4 Conditioning and Learning  
Introduction to experimental findings and contemporary theories of conditioning, learning, and motivation.

363-4 Conditioning and Learning Methods  
Problems and methods of research in conditioning, learning, and motivation. 2 hours lecture, 4 hours lab. Prerequisite: PSY 300, 361.

371-4 Perception  
A study of the active processes by which organisms gather, interpret, and respond to environmental stimuli.

373-4 Perception Methods  
Laboratory experience and research techniques in various areas of perception. 2 hours lecture, 4 hours lab. Prerequisite: PSY 300, 371.

391-4 Physiological Psychology  
Physiological mechanisms of behavior. Special emphasis on motivational systems and learning. Prerequisite: PSY 111, 112 (no prerequisite for biological sciences majors).

392-4 Advanced Physiological Psychology  
Physiological mechanisms of behavior. Special emphasis on motor and sensory systems. Prerequisite: PSY 391.
393-4 Physiological Psychology Methods
Laboratory exercises in neuropsychology
2 hours lecture, 4 hours lab. Prerequisite:
PSY 300, 392.

400-4 Advanced Research Design and Quantitative Analysis
Use of factorial designs and multivariate tests in psychological research. Prerequisite: PSY 300
(Previously listed as PSY 415.)

401-4 Advanced Experimental Design: Packaged Computer Programs
Focus is on the use of canned computer programs such as SPSS, SAS, and BIOMED in the design, analysis, and interpretation of behaviorally-oriented research. Prerequisite:
PSY 300, 400. (Previously listed as PSY 416.)

411-4 Advanced Topics in Abnormal Psychology
Theories and research relating to causes, symptoms, and influences of abnormal behavior. Permission of instructor required. Prerequisite: PSY 311. (Previously listed as PSY 435.)

419-4 Advanced Topics in Physiological Psychology
Detailed examination of selected areas in physiological psychology. Prerequisite:
PSY 391. (Previously listed as PSY 491.)

421-4 Advanced Topics in Cognition and Learning
Detailed examination of selected areas in cognition and learning. Prerequisite: PSY 321.

429-4 Advanced Topics in Interpersonal Relations
Interpersonal relations as a subject of research and theory. Consideration of application to therapeutic intervention and everyday interaction. Prerequisite: PSY 331 or 351.

431-4 Advanced Topics in Personality
Review of selected topics in personality. Selected personality constructs and their measurement (e.g., need for achievement, self-concept), as well as situational determinants of behavior. Prerequisite: PSY 331.

432-4 Practicum in Applied Psychology
Work under supervision in an applied psychological setting consistent with individual student’s interests, e.g., mental health agency, industrial, or organizational setting. Advanced standing in psychology and permission of instructor required.

433-4 Developmental Psychopathology
Survey of theoretical approaches to the description and explanation of childhood psychopathology, overview of current research in the area of childhood psychopathology, and description of methodological problems involved in clinical research with children. Permission of instructor required. Prerequisite: PSY 341 or equivalent.

439-4 Theory and Research in Clinical Psychology
Overview of contemporary clinical approaches, research techniques, and empirical data. Permission of instructor required. Prerequisite: PSY 331, 411, or advanced standing.

441-4 Advanced Topics in Developmental Psychology
Development of learning and cognition in children covered in depth. Prerequisite:
PSY 341.

443-4 Psychometrics
Emphasis on measurement theory and its applications, including concepts of reliability, validity, discrimination, and prediction. Permission of instructor required. Prerequisite:
PSY 331 or advanced standing.

444-4 Advanced Industrial Psychology
Theories and research findings in selected topics in industrial psychology. Permission of instructor required. Advanced standing required.

447-4 Psychology of Aging
Overview of the theoretical, methodological, and conceptual issues in the study of human aging. Focus is on both current research and applied relevance. Junior standing required. Prerequisite: PSY 111, 112, 341.

449-4 Theory and Research in Hypnosis
Presentation of hypnosis as a subject of research and theory. Coverage of history, myths, legal and ethical aspects, relation to psychopathology and to normal personality traits; applications in psychology, medicine, and dentistry; and potentials and limitations in regard to self-control and self-improvement. Prerequisite: PSY 111, 112, 311 or 331.

450-4 Biofeedback: Research and Application
An introduction to biofeedback in the context of general behavior theory of learning. Literature is surveyed. Topics include problems of methodology and experimental design and application to problems in clinical psychology. Recommended preparation: PSY 391. Prerequisite: PSY 361.

451-4 Advanced Topics in Social Psychology
Detailed examination of selected areas of current research in social psychology. Prerequisite: PSY 351.

455-4 Psycholinguistics
An overview of language: its development during the first years of life, its biological basis, its normal and abnormal characteristics. Advanced standing or permission of instructor required.

461-4 Advanced Topics in Conditioning and Learning
Continued study of conditioning, learning, and motivation. Prerequisite: PSY 361.
236 Courses/Psychology

465-4 Information Processing
Study of information processing skills such as selective attention, pattern recognition, reading, problem solving, and human performance. Prerequisite: PSY 321.

471-4 Advanced Topics in Perception
Advanced topics in perception; special emphasis on modern controversial issues and theories. Prerequisite: PSY 371.

478-4 Animal Behavior
(Listed jointly with Department of Biological Sciences; see BIO 478.) Physiology, phylogeny, and ontogeny of behavior. Recommended preparation: BIO 302 and one course in statistics. Prerequisite: BIO 111, 112, 114; or BIO 101, 102, 103; or PSY 111, 112, 300.

481-4 History of Psychology
Major trends in the development of psychology from its beginnings to the modern period. Advanced standing or permission of instructor required.

482-4 Theories and Systems in Psychology
Comprehensive treatment of the historical antecedents for selected theories and systems in psychology. Junior or senior standing required.

488-1 to 4 Seminar in Special Topics
Course of variable content. Specific topics announced each time course is offered. Advanced standing in psychology or a related field and permission of instructor required.

489-2 Honors Seminar
Course of variable content; primarily derived from current honors thesis research. Literature surveys, experimental designs, and special analytical problems presented and discussed by students and faculty. May be repeated once. Acceptance into psychology honors program required.

490-1 to 4 Independent Readings
Specific topics selected by student and instructor. Graded pass/unsatisfactory. Advanced standing and permission of instructor required.

498-1 to 4 Independent Research
Original problems for investigation. Topics vary from quarter to quarter. Permission of instructor required.

499-1 to 4 Honors Research Project
Original problems for investigation leading to a psychology department honors thesis. Each honors student must complete a minimum of three credit hours of PSY 499 (nine credit hours maximum). Topics vary from quarter to quarter. Acceptance into psychology honors program and permission of honors adviser required.

Quantitative Business Analysis/QBA

201-3 Introduction to Statistical Analysis
Statistical methods used in analysis of business problems. Theory and application of frequency distributions; measures of location; variation and further descriptions. Introduction to probability; expectations; theoretical probability distributions; sampling and sampling distributions. Prerequisite: MTH 129.

202-3 Introduction to Statistical Inference
Emphasizes setting standards as aids in decision making. Techniques covered include inferences concerning means, standard deviations, proportions, analysis of variance, nonparametric tests, linear regression, and correlation. Systematic presentation of price and quality indexes, seasonal trend and cycle analysis. Prerequisite: QBA 201.

Advanced Courses
All of the following courses require junior standing in addition to the listed prerequisites.

303-3 Introduction to Operations Research I
Introduces mathematical methods of modern quantitative analysis. Topics include linear programming, queuing theory, simulation, and decision theory. Prerequisite: MTH 226.

304-3 Introduction to Operations Research II
Introduces mathematical methods of modern quantitative analysis. Topics include linear programming, queuing theory, simulation, and decision theory. Prerequisite: QBA 202 or equivalent, MTH 226.

320-3 Information Systems Design
Use of stored programs and systems analysis techniques to support decision making in the areas of accounting, finance, marketing, economics, and management. Prerequisite: AIS 300.

321-3 Management Operating Systems
Instructional experience provided through analysis and design of management operating systems. To complement and integrate classroom instruction, course includes visits to local firms currently utilizing management operating systems. Prerequisite: QBA 320.

430-3 Quantitative Methods for Business Decisions I
Simple random sampling, stratified random sampling, simple cluster sampling, and multistaged cluster sampling discussed as to theory, procedure, and business application. Experimental designs for orderly collection of data for use with the F ratio in the test of hypotheses explored. Linear bivariate and multivariate regression and correlation analyses described with associate models and computer applications. Prerequisite: QBA 202.
Rehabilitation/Courses

431-3 Quantitative Methods for Business Decisions II
Topics include discriminant analysis, factor analysis, time series analysis, statistical quality control, nonparametric statistics, canonical analysis. Emphasis on application of statistical analysis to business problems. Prerequisite: QBA 202.

440-3 Deterministic Models of Operations Research
Designed to strengthen student's ability to formulate problems in mathematical terms and to solve resulting model using analytic techniques. Classical optimization and advanced applications of linear, integer, and dynamic programming are discussed. Prerequisite: QBA 303.

441-3 Probabilistic Models in Operations Research
Designed to strengthen student's ability to formulate problems in probabilistic terms and to solve resulting model using analytic techniques. Topics include simulation, Markov processes, and queuing theory. Prerequisite: QBA 304 or equivalent, MTH 226.

452-3 Systems Simulation in Business and Economics
Introduction to simulation techniques as applied to business and economic systems. Topics include basic concepts, applications, and technical problems associated with use of systems simulation. Design and operation of computer models emphasized. Prerequisite: CS 142.

477-1 to 4 Special Studies in Management Science
Topics vary from quarter to quarter. Permission of instructor required.

478-3 Honors: Independent Study in Management Science
Research in management science for fulfillment of the Honors Program project requirement. Permission of department chair required.

481-6 Internship in Management Science
One quarter faculty-supervised internship in management science. The student will work in a firm or public agency, participate in seminars, and submit reports for completion of the course. Approval of Management Science Committee required.

491-3 Senior Seminar in Management Science
Entails the investigation of an existing quantitative business problem in a firm or organization in the Dayton metropolitan area. The seminar participants, working in groups of three or four, are expected to initiate a research proposal, perform a field research investigation, and present findings orally and in writing to management. Enrollment limited to seniors in management science or permission of instructor required.

Rehabilitation/RHB

201-4 Introduction to Rehabilitation
A general introduction to the philosophy, history, and development of rehabilitation. The course familiarizes students with areas to be considered when providing services to persons with physical/mental disabilities.

202-4 Rehabilitation Resources
Designed to prepare students to locate, evaluate, and utilize local, state, and federal resources which are available to meet the needs of the disabled and disadvantaged. Students also receive information about obtaining funds to establish programs and organizations via proposal writing. Graded pass/unsatisfactory. Prerequisite: RHB 201.

203-4 Pre-Practicum Field Experience
Provides an early experience working with physically/mentally disabled persons in a structural setting, determining their suitability to work with specific groups. Requires ten clock hours per week in agency. Seminar permits students to explore rehabilitation practicum and professional characteristics which facilitate rehabilitation. Students are supervised by university and agency supervisors. Prerequisite: RHB 201, 202.

213-3 Introductory Field Experience in Rehabilitation Services
Seventy-five clock hours of supervised field experience intended to acquaint the community/rehabilitation services student with career options, with the structure and administrative procedures of various human services agencies, and with the application of client-intake procedures. Applications must be made one quarter prior to planned placement. Enrollment limited to community/rehabilitation services majors in good academic standing. Prerequisite: RHB 201.

214-3 Rehabilitation Services Interviewing
Classroom introduction to the role of the rehabilitation services aide in the client-intake process, and to how this process occurs within the organizational structure of human services agencies. Prerequisite: RHB 201.
Courses Rehabilitation

223-3 Advanced Field Experience in Rehabilitation Services
Seventy-five clock hours of supervised field experience intended to provide the community/rehabilitation services student with in-depth knowledge of the structure and processes of a selected agency, of the job description duties of the rehabilitation services aide within this agency, and of the special, social, personal, and vocational needs and problems of the target client population. Application must be made one quarter prior to planned placement. Enrollment limited to community/rehabilitation services majors in good academic standing. Prerequisite: RHB 201, 213, 214.

301-4 Medical Aspects of Rehabilitation I
Introduction to medical terminology and system disorders that usually have continued and long-standing residual effects and commonly require rehabilitation intervention. Consideration of the social and vocational adjustments that must be made by individuals with disabilities. Prerequisite: RHB 201.

302-3 Medical Aspects of Rehabilitation II
Examination of the treatment and rehabilitation of those physical disabilities that impose chronic limitations on activity. Consideration of the social and vocational adjustments that must be made by the individual. Prerequisite: RHB 301.

303-4 Strategies for Employing the Physically Disabled
Overview of vocational theories, job-seeking skills, various vocational evaluation systems, occupational information, and other techniques which facilitate employment of clients with physical disabilities. Attention is given to job analysis, job placement, and other techniques. Consideration of attitudinal and architectural barriers which clients may encounter. Prerequisite: RHB 201, 301.

304-4 Rehabilitation Casework
Assists the student in acquiring skills in interviewing, case recording, writing rehabilitation plans with appropriate justifications, and case management. Junior standing required. Prerequisite: RHB 201, 202, 301.

370-1 to 3 Independent Study Minor Problems in Rehabilitation
Independent study in areas of interest to the student but not readily available in any existing course. Topics vary from quarter to quarter. Junior standing required.

401-4 Functional Disorders
Introduction to techniques used to rehabilitate clients who are disabled by psychiatric, neurotic, or character trait disorders, chemical dependency or mental deficiency. Consideration is given to the uniqueness of problems encountered by the clients as they return to society. Prerequisite: RHB 201, 301; PSY 311.

402-4 Behavioral Assessment in Rehabilitation
Assists the student in developing knowledge and skills essential to the interpretation and use of diagnostic information. Work evaluation reports, general aptitude test batteries and psychological test reports are examined. Prerequisite: RHB 201, 202, 301; PSY 307.

403-4 to 12 Rehabilitation Practicum
An integrative experience for the rehabilitation education student which requires 300 clock hours of field work supervised by the faculty and the agency. The requirement may be completed in one quarter (twelve credit hours) or over three quarters (four credit hours per quarter). Graded pass/unsatisfactory. Application must be made one quarter prior to planned placement assignment. Minimum 2.25 grade point average required. Prerequisite: RHB 201, 202, 301, 303, 304, 401, 402.

404-4 Rehabilitation Seminar
Problems and programs of special interest in rehabilitation. For advanced rehabilitation education majors. Prerequisite: RHB 201, 301, 303, 402.

405-3 Rehabilitation of the Deaf I
Introduction to social, vocational, and adjustment problems of the deaf. Manual communication technique for professionals preparing to work in rehabilitation or other programs for the deaf. Off-campus field experience required.

406-3 Rehabilitation of the Deaf II
Further review of the social, vocational, and adjustment problems of the deaf. Continuation of developing manual communication techniques for professionals preparing to work in rehabilitation or other programs for the deaf. Off-campus field experience required.

407-4 Principles of Rehabilitation Counseling
Focuses on the development of the basic skills and attitudes associated with rehabilitation counseling. Interview style and format are examined along with listening and responding techniques associated with the holistic approaches. Prerequisite: RHB 201, 202, 301, 304.
408-4 Community Aspects of Deafness
Introduction to the social, cultural, and linguistic history of the deaf community in the United States. Field experience required. Prerequisite: RH 201, 202, 301, 405, 406.

409-4 Intermediate Sign Language
Designed to improve the student’s skill in American sign language. Consideration is given to signed English and procedures required to obtain interpreters for the deaf. Prerequisite: RH 201, 202, 301, 405, 406, 407.

410-4 Counseling Aspects of Deafness
To develop a broader understanding of the psychological, medical, social, and vocational concerns of hearing-impaired individuals. Focus is on acquiring basic counseling skills, medical aspects of hearing, and attitudinal barriers.

411-4 Physical Disability and Human Behavior
Designed to familiarize students with the interaction of physical disabilities and human behavior. Appropriate group approaches are reviewed. Prerequisite: RH 301, 407, CUN 461.

470-1 to 3 Special Topics
Special workshop courses to meet the needs of inservice rehabilitation professionals as well as providing courses on a one-time basis to meet special interests. May be taken for letter grade or pass/unsatisfactory. Junior standing required.

Religion/REL

111-4 Eastern Religions
General introduction to the major religious traditions of South Asia and East Asia: Hinduism, Buddhism, Confucianism, Taoism, and Shintoism.

112-4 Western Religions
General introduction to the major religious traditions of Judaism, Christianity, Islam, and other selected religious traditions.

113-4 Contemporary Issues in Religion
Study of selected problems, ideas, and religious developments that have become important in contemporary society.

114-4 What is Religion?
Explores the question of the meaning of religion by looking at various ways in which people experience and express it. Diverse examples of religion and religious life are considered.

200-4 Hebrew Scripture (Old Testament)
Introduction to the literature, history, and religion of ancient Israel.

201-4 Post-Biblical Judaism
Introduction to the literature and religion in Jewish sects from the Exile (ca. 500 B.C.E.) to the Mishnah of Judah the Prince (200 C.E.), including the Dead Sea Scrolls. Offered alternate years.

202-4 Literature and Religion of the New Testament
Introduction to the literature, history, and religion of early Christianity.

203-4 Biblical Studies
Investigation and discussion of specific areas in Biblical studies: for example, Hebrew prophets, Jesus in the Gospels, Paul’s letters, or a Biblical book or theme. May be repeated with different titles.

210-4 Religion and the American Experience
Survey of different religions in the United States with attention to the growth of a distinctive form of religion shaped by the American experience.

230-4 Introductory American Religion Studies
Introduction to specific segments of American religious life. Focuses on one or more distinctive religious groups or movements in the context of American history and culture. May be repeated with different titles.

270-4 Approaches to Religious Ethics
Examination of various religious ethical systems from diverse cultural situations.

280-4 Philosophy of Religion: Faith and Reason
(Listed jointly with Department of Philosophy; see PHIL 280.) Selected cross-disciplinary issues arising from philosophy and religion, Judeo-Christian concept of God, grounds for belief and disbelief, revelation and faith, religious language, verification, immortality and resurrection, karma and reincarnation. Issues are discussed on the basis of selected texts on faith and reason.

290-4 Current Problems
Investigation and discussion of a single current problem in the field of religion. Topics selected each quarter by the department. May be repeated with different titles.

300-3 Technology and Society
(Taught jointly with School of Engineering; see EGR 300) Important developments in engineering and technology; their interrelations with society and human values as viewed in historical and in contemporary perspective. Open to all juniors and seniors.

301-4 Religion and Sexuality
Analysis of the relation of religion to sexuality and related ethical issues.

303-4 Space and Faith: Topics in Religion and Geography
(Taught jointly with Department of Geography; see GEO 303.) The interrelation of religious and geographical factors in selected cultures of East and South Asia. May be repeated with different titles.
304-4 Religions in the Biblical Period
Examination of selected religious movements and/or problems in the biblical period, and their interconnectedness and mutual influences. May be repeated with different titles.

305-4 Topics in Biblical Literature
Examination of selected aspects of biblical literature from both literary and historical perspectives to explore the possible structures, functions, and meanings of this literature for its original community. May be repeated with different titles.

306-4 The Marxist-Christian Dialogue
(Taught jointly with Department of Political Science; see PLS 306.) Examination and evaluation of the Marxist-Christian dialogue. Emphasis on such categories as hope, liberation, alienation, man, love, class struggle, transcendence, power, and change. Junior or senior standing or permission of instructor required.

309-4 Christianity
Examination of the structures of religious experience which have shaped the development of Christianity in history. Institutional and ritual forms are investigated as systems of meaning against the backdrop of the general history of religions.

310-4 Early and Medieval Western Religious Thought
Survey of important themes in religious thought of the major Western traditions. Selected readings from primary sources and secondary interpretations.

311-4 Reformation and Modern Western Religious Thought
Survey of important themes in the religious thought of the major Western traditions. Selected readings from primary sources and secondary interpretations.

312-4 Judaism: Faith and People
Examination of Judaism as a religious faith and people, with special reference to formative historical, social, ethnic, and cultural factors.

313-4 The Development of Jewish Thought
Foundation of Jewish thought after the close of the biblical period traced from the Talmudic age through Philo and representative medieval thinkers down to the molders of contemporary Jewish philosophy. Offered alternate years.

314-4 Contemporary Jewish Thought
Examination of the major themes and issues in the works of contemporary Jewish thinkers, e.g., Borowitz, Herberg, Fackenheim, Kaplan, Rothschild, Heschel, Rubinstein, and Weisel.

320-4 Religion and Ethics in the Arts
Analysis of the religious and ethical dimensions, themes, and problems presented in selected contemporary art forms, e.g., architecture, cinema, drama, literature, music, painting, and sculpture. May be repeated with different titles.

325-4 Understanding Death
Basic issues in death and dying, using resources from human sciences and humanities in religious perspective.

330-4 Topics in American Religion
Examination of selected topics in American religion to investigate its basic religious structures and to explore the relationship of religious phenomena to their cultural context. May be repeated with different titles.

340-4 Topics in Asian Religion
Studies in the religious dimension of Asian cultures, with attention to historical, social, and aesthetic perspectives. May be repeated with different titles.

341-4 Islam
Study of the origin and development of Islam, including contemporary issues and problems. Offered on an irregular schedule.

349-4 Asian Religious Philosophy
(Listed jointly with Department of Philosophy; see PHL 349.) Perennial themes in Asian cultures (such as individual, society, and cosmos; appearance and reality; time and history; karma, freedom, and responsibility) as they have been treated in the philosophical traditions of these cultures.

360-3 Anthropology of Religion
(Listed jointly with Department of Sociology and Anthropology; see ATH 346.) Anthropological approach to the meaning and function of religion in social life and the nature of the thought or belief systems that gave rise to different forms of religious life; emphasis on primitive and peasant societies.

361-4 Sociology of Religion
(Listed jointly with Department of Sociology and Anthropology; see SOC 361.) General treatment of religion, examining the influence of religious ideas and institutions on other social institutions and influence of society upon religion. Introductory courses in religion or sociology required.

362-4 Classical Psychologies of Religion
An introduction to the theories of some individuals who have made lasting contributions to the development of the psychology of religion. Individuals chosen to offer contrasting positions.
363-4 Religion and Psychology
An introduction to selected themes, issues, and problems in the interaction of religion and psychology. Differing points of view are considered. May be repeated with different titles.

370-4 Studies in Ethics
A special topics course for intensified study of the ethical dimensions of a particular religious tradition or for concentrated study in theoretical or practical ethical problems. Topics announced with each offering. May be repeated with different titles.

378-4 Ethics and Medicine
(Listed jointly with Department of Philosophy; see PHL 378.) Examination of ethical issues confronting society in areas of medicine and health care, from perspective of philosophical and theological ethics. Examples include ethics of abortion, euthanasia, experimental medicine, and behavior control.

381-4 Philosophy of Religion: Contemporary Western Survey
(Listed jointly with Department of Philosophy; see PHL 381.) Cross-disciplinary perspective on philosophical and religious schools of thought in the early twentieth century. Absolute and personal idealism, spirit, value, positivism and naturalism, history and culture, modernism and pragmatism, religious consciousness and phenomenology.

382-4 Philosophy of Religion: Process
(Listed jointly with Department of Philosophy; see PHL 382.) Realism and the revolt against idealism. Cross-disciplinary analysis of a major contemporary philosopher and the implications of his thought for religion. Focus on Alfred North Whitehead.

383-4 Philosophy of Religion: Secular
(Listed jointly with Department of Philosophy; see PHL 383.) Cross-disciplinary analysis of modes of human awareness through which religious meaning is expressed (sensation, morality, beauty, reason, human relations). Examination of presuppositions of contemporary secular religion in existentialism.

394-4 Existentialism
(Listed jointly with Department of Philosophy; see PHL 394.) Representative writers of the existentialist movement. Junior standing or permission of instructor required.

399-4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of religion.

400-4 Seminar in Religion
Topics chosen by the department. May be repeated with different titles.

410-4 Religious Themes in Literature
(Taught jointly with Department of English; see ENG 460.) Courses offered under this number provide intensive study of literary works in terms of significant and recurring religious themes and images as they can be traced in various cultures and literary traditions. Junior or senior standing required.

417-4 Evolution
(Taught jointly with Department of Biological Sciences; see BIO 417.) Introduction to the biological, philosophical, theological, and ethical aspects of evolution. Junior or senior standing required.

419-3 Ethics in an Industrial Society: The Responsibility of Business in Society
Ethical responsibilities of business in light of political, moral, social, and religious considerations. Emphasis on analysis and evaluation of the changing framework of responsibilities facing both business organizations and their leaders.

429-4 Foundations for Religion Studies
Introduction to various methods utilized in religion studies and an application of these methods to concrete data.

430-3 Teaching about Religion in the Public Schools
(Taught jointly with College of Education and Human Services; see ED 430.) Introduction to the historical background and court decisions pertaining to teaching about religion in public schools; current ways in which religion is taught in the public schools; new experimental approaches to teaching about religion.

431-4 Religion in American Life
Development of religious thought and institutional life in the United States viewed in relationship to American social change. Offered alternate years.

450-1 to 4, 451-1 to 4, 452-1 to 4 Undergraduate Research in Religion
Intensive consideration of problems and issues in a given area of religion study; topics determined in consultation between student and department. Graded pass/unsatisfactory, at discretion of department.

453-4, 454-4 Age of Renaissance and Reformation
Decline of European feudalism and rise of the nation-state; revival of culture and arts; decline of universal Church and growth of religious diversity. 453: 1350-1500. 454: 1500-1648. Offered alternate years.

470-3 Workshop
Intensive study of selected problems (e.g., the teaching of religion in secondary schools, medical ethics) to meet particular needs of participating students. Topics vary from quarter to quarter. May be repeated with different titles subject to maximum limits established by student's department. Junior or senior standing or permission of instructor required.
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481-1 to 4, 482-1 to 4, 483-1 to 4 Independent Reading
Written proposal by each student, with faculty and departmental approval, required for acceptance in course. Enrollment generally limited to juniors and seniors.

Russian/RUS

101-4, 102-4, 103-4 First-Year Russian
Study of vocabulary and structure of the Russian language; practice in conversation, reading, and writing. Must be taken in sequence.

111-4 Essentials of Russian
Introduction to Russian with an emphasis on speaking the language.

201-4, 202-4 Second-Year Russian
Grammar review, reading and discussion of selected texts with practice in speaking and writing. Must be taken in sequence. Prerequisite: RUS 103.

203-4 Second-Year Russian
Continuation of Russian 202 with an emphasis on speaking and writing the language. Prerequisite: RUS 202 or equivalent.

301-4, 302-4 Russian Literature
Historical survey of Russian literature from its beginning to the present. Prerequisite: RUS 202 or equivalent.

341-4, 342-4 Russian Conversation
Emphasis on the culture of the Russian-speaking world. Prerequisite: RUS 202 or equivalent.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of Russian. Prerequisite: RUS 202 or equivalent.

471-4 Introduction to Historical and Comparative Linguistics
(Listed jointly with Linguistics; see LI 471.) Permission of instructor required.

Social Work/SW

270-4 Introduction to Social Welfare and Social Work
Introduction to social work program: History, purpose, and effectiveness of the contemporary social welfare system; development of the social work profession. A minimum grade of C must be earned to continue as a major.

280-4 Human Behavior in Social Functioning
Analysis of human behavior in assessment of social functioning as it relates to social work intervention. Includes ego psychology, social systems theory, role theory, and learning theory. May be taken concurrently with SW 270.

320-1 to 6 Workshops in Current Problems
(Listed jointly with Department of Sociology and Anthropology; see SOC 314.) Intensive study of a particular problem area, utilizing professionally qualified personnel from academia and the practice community. Specific topics to be added with individual workshops. May be repeated to a maximum of twelve credit hours.

370-4 Community Welfare Organizations and Services
Analysis of community agencies designed to meet social welfare needs. Four-hour field placement per week in a social agency. Should be taken before all 400-level courses. Prerequisite: SW 270, 280, or permission of instructor.

380-4 Basic Practice Theory
Foundation sequence of generic social work practice theory. Problem assessment, data collecting, data analysis, interventional methods, and evaluation procedures. Introduction to task-centered approach. May be taken concurrently with SW 370. Prerequisite: SW 270, 280; COM 102.

389-2 to 4 Seminar on Special Problems in Social Work Practice
Selected topics related to current issues in social work practice; readings, research, discussion. Completion of twelve credit hours of social work or permission of instructor required.

394-2 to 4 Readings in Social Work
May be taken for letter grade or pass/unsatisfactory.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of social work. May be taken for letter grade or pass/unsatisfactory.

462-4 Social Gerontology
(Listed jointly with Department of Sociology and Anthropology; see SOC 462.) Study of social aspects of aging, the needs of the aging population, and society's response to these needs.

463-4 Social Gerontology II
Second course in a two-quarter sequence of social gerontology. Prerequisite: SW 462 or equivalent experience.

464-4 Racial and Ethnic Awareness in the Human Services
Impact of racism and ethnicity on the delivery of human services. Examination of interpersonal relationships and institutional policies and procedures; provides opportunity to develop strategies for change at both levels. Prerequisite: SW 370 or permission of instructor.
470-4 Social Welfare Policy
Development, status, and effectiveness of social welfare policies. Application of social work values and knowledge to current policies, programs, and services. It is recommended that this course be taken in the senior year. Prerequisite: SW 370.

472-4 Social Work and the Law
Legislative base of various social welfare agencies and programs. Legal authority aspects of various social work practice roles. Social work practice relations to judicial, law enforcement, and legislative processes. Permission of instructor required.

473-4 Child Welfare
Framework for categorizing child welfare problems. Historical and current examination of legislation, policies, programs, and service to address child welfare needs. Including the role of the child welfare worker.

477-1 to 4 Seminar on Special Problems in Social Welfare Policy and Services
Selected topics related to the operation of the social welfare system in America: issues, trends, and problems. Completion of twelve credit hours of social work or permission of instructor required.

481-4 Advanced Practice: Individuals
In-depth study of social work practice theory for the enhancement of social functioning of individuals. Prerequisite: SW 380.

482-4 Advanced Practice: Groups
In-depth study of social group work practice theory. Course learning experiences incorporate practice situations. Prerequisite: SW 380.

483-4 Advanced Practice: Families
In-depth study of social work practice theory for the enhancement of family social functioning. Prerequisite: SW 380.

484-4 Advanced Practice: Organizations and Communities
Strategies for effecting change in organizations, service delivery systems, and social welfare resource utilization in communities. Prerequisite: SW 380.

487-4 or 12 Practicum in Social Work
Application of theory to practice in agency settings. Individual supervised learning experiences and on-site seminars under direction of instructor and agency staff. May be repeated to a maximum of twelve credit hours. Applications for placement must be made with the instructor one quarter before planned registration. Permission of instructor required. Prerequisite: SW 481.

490-4, 491-4 Research Methods in Social Work I, II
Sequential study of evaluative research design methodology. Development of criteria for the selection and intelligent use of research reports. Evaluation of selected research reports for relevance to social work practice. Prerequisite: SW 370 or permission of instructor.

492-4 to 4 Independent Research in Social Work
May be taken for letter grade or pass/unsatisfactory.

Sociology/SOC

111-4 The Sociological Perspective
Basic sociological concepts and issues at general introductory level. Exploration of such questions as: How do we become members of society? How do societies change? What affects our beliefs and values?

112-4 Modern Society
Problems facing modern society and possible solutions. Exploration of such questions as: What is the nature of modern society? How are modern political, economic, and educational systems organized?

113-1 SIMSOC (Simulated Society)
SIMSOC is a learning game designed to supplement the materials covered in introductory sociology courses. The game involves students as members of a simulated society. May be taken for letter grade or pass/unsatisfactory. Prerequisite or corequisite: SOC 111.

113-2 SIMSOC II
This course builds on experience of SIMSOC I, analyzes societal processes: small group interaction, stratification, leadership roles, political and economic philosophies, minority relations. Students simulate a society and analyze experience. Graded pass/unsatisfactory. Prerequisite: SOC 113.
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221-4 Exploring Social Issues
Course of variable content (to be developed). Focus is on specific social problems. Topics vary from quarter to quarter. May be repeated to a maximum of twelve credit hours with different titles.

301-4 History of Sociological Theory
Historical study of the emergence and development of sociological thought from Adam Ferguson and Auguste Comte through the nineteenth century, emphasis on the basic writings of Comte, Spencer, Marx, Durkheim, and Max Weber. Nine credit hours of sociology required.

303-4 Contemporary Sociological Theory
Continuation of SOC 301. Analyzes contemporary sociological theory (structural functionalism, symbolic interactionism, critical theory, phenomenological theory) with a focus on the interpretation of society, and on such major figures as Talcott Parsons, Alfred Schutz, Theodor Adorno, and Erving Goffman.

311-4 Technology and Society
(Taught jointly with School of Engineering; see EGR 300.) Important developments in engineering and technology, their interrelations with society and human values viewed in historical and in contemporary perspective.

312-1 to 6 Workshop in Current Problems
Intensive study of a particular problem area, utilizing professionally qualified personnel from the academic and community environments. Specific subtitles to be added with individual workshops. May be taken for letter grade or pass/unsatisfactory. May be repeated to a maximum of twelve credit hours with different topics. Permission of instructor required.

314-1 to 6 Workshop in Current Problems
(Listed jointly with Department of Social Work; see SW 399.) Intensive study of a particular problem area, utilizing professionally qualified personnel from the academic and community environments. Specific titles to be added with individual workshops. May be taken for letter grade or pass/unsatisfactory. May be repeated to a maximum of twelve credit hours with different titles.

315-2 Drug and Alcohol Intervention Workshop
Participant observation of the intervention and treatment of drug and alcohol problems, and observer-as-participant of therapy and counseling groups, intense client/therapist contact, and of professionals practicing intervention and confrontation techniques. May be repeated to a maximum of four credit hours. Prerequisite (one of the following): CNL 461; PSY 305, 331; RHB 301, 407; SW 270, 481, 482, 483; SOC 320, 461; prenursing concentration; premedical concentration; or permission of instructor.

316-1 to 6 Workshop in Current Problems
Intensive study of a particular problem area, utilizing professionally qualified personnel from the academic and community environments. Specific titles to be added with individual workshops. May be repeated to a maximum of twelve credit hours with different titles.

320-4 Sociology of Deviant Behavior
Extensive exploration of the various sociological approaches to the study of deviance and social disorganization with emphasis on contemporary sociological theory and research. Junior or senior standing or permission of instructor required.

330-4 Criminology
Survey of crime, some causal theories, and attempts at crime prevention in the United States.

332-4 Juvenile Delinquency
Problems of definition and treatment of delinquency. Preparation for further study and work with delinquents.

340-4 Social Organization
Theories and analysis of social organization from micro to macro levels with emphasis on theories of equilibrium and disequilibrium.

341-4 Social Stratification
Structures, theories, and consequences of social inequality with special emphasis on the United States.

342-4 People on the Move
An introductory survey of forces influencing the structure and growth of human populations and the social consequences of population changes.

345-4 Social Change
Study of dynamic processes such as evolution, revolution, regression, diversification, disintegration, and reconstitution at micro and macro social levels.

350-4 Sociology of Occupations and Professions
Investigation, analysis, and discussion of contemporary theories focusing on the relationship of the individual to work.

360-4 Sociology of Family
Sociological analysis of development of the family, its relationship to society, and its contribution to personality.

361-4 Religion and Society
(Listed jointly with Department of Religion; see REL 361.) General treatment of religion, examining the influence of religious ideas and institutions on other social institutions, and the influence of society on religion. Introductory courses in sociology or religion required.
363-4 Sociology of Education
The school as a social institution. Internal and external influences, structure of the school social system, and sociological issues affecting the school such as social class factors and equality of educational opportunity.

380-4 Individual and Society
Interaction between society and the individual, forms and content of social relationships, and socialization as a social process. Emphasis on the basic writings of G.H. Mead, Cooley, Gentile, and others.

390-2 to 4 Directed Readings in Sociology
May be taken for letter grade or pass/unsatisfactory.

396-2 Careers for Sociology Majors
A combination workshop and field study in which students learn how to prepare a resume, how to find out about career possibilities, and how to meet people who are active practitioners.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of sociology. May be repeated to a maximum of twelve credit hours with different topics. Permission of instructor required.

401-4 Selected Topics in Theory/Methods
Specific topics announced each time course is offered. May be repeated to a maximum of twelve credit hours with different titles.

405-4 Seminar in Sociological Theory
An in-depth analysis of selected topics in sociological theory for advanced students, especially those considering graduate study. Topics vary from year to year.

407-4 Collecting Social Data II
An advanced course in social research techniques which provides students the opportunity to design and carry out a full-scale research project within a seminar-like class setting. Students are encouraged to select research problems related to their major interest areas.

432-4 Penology
Historical development and critical assessment of penal institutions. Field visits to selected institutions. Prerequisite: SOC 330 or 332 or permission of instructor.

433-4 Internship in Corrections
Supervised field experience in corrections (probation, parole, jail). Course requires readings, a log, progress reports, and a paper synthesizing readings and field experience. Enrollment required for two consecutive quarters. Prerequisite: completion of six credit hours from SOC 330, 332, 432, or permission of instructor.

434-4 Social Life in Extreme Conditions
Examines the concept of social organization via the forms social interaction takes in extreme conditions such as mental hospitals, concentration camps, prisons, and slum rows. Junior or senior standing or permission of instructor required.

439-4 Selected Topics in Problems/Deviance
Course of variable content. Specific topic announced when course is offered. May be repeated to a maximum of twelve credit hours with different topics. Permission of instructor required.

440-4 Bureaucracy and Bureaucrats
Broad theoretical and practical study of individual and group relationships in formal organizations viewed as total social systems.

441-4 Industrial Sociology
Cross-cultural analysis of industrialization; organization of relationships within industrial social groups.

442-4 Race and Minority Relationships
Study of intergroup, racial, and ethnic group relations, including the processes and consequences of conflict, prejudice, and discrimination.

444-4 Urban Sociology
An approach to understanding the causes and consequences of urbanization and the various kinds of urban life.

446-4 Neighbors and Communities
Examination of various types of American communities and major theories concerning them.

461-4 Medical Sociology
The social dimension of health and illness. Consideration of the patterns of disease, along with the organization, provision, and delivery of medical services.

462-4 Social Gerontology
(Listed jointly with Department of Social Work; see SW 462.) Study of social aspects of aging, the needs of the aging population, and society's response to the needs.

463-4 Social Gerontology II
Second course in a two-quarter sequence of social gerontology. Explores in-depth concepts and issues related to aging. Prerequisite: SOC 462 or permission of instructor.

470-4 The Future of the Family
Investigation, analysis, and discussion of contemporary research focusing on the family as a changing social institution.

479-4 Selected Topics in Social Institutions
Variable content. Specific titles announced in quarterly class schedule when course is offered. May be repeated to a maximum of twelve credit hours with different topics. Permission of instructor required.
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481-4 Sociology of Small Groups
Study of face-to-face interaction with emphasis on both intergroup and intragroup structures and processes.

489-4 Selected Topics in Microsociology
Variable content. Specific topics announced when course is offered. May be repeated to a maximum of twelve credit hours with different topics. Permission of instructor required.

490-2 to 4 Independent Research in Sociology
May be taken for letter grade or pass/unsatisfactory.

Spanish/SPN

101-4, 102-4, 103-4 First-Year Spanish
Study of the vocabulary and structure of the Spanish language; practice in conversation, reading, and writing. Must be taken in sequence.

111-4 Essentials of Spanish
Introduction to Spanish with an emphasis on speaking the language.

141-2 Basic Spanish Conversation
Practice in conversation, emphasizing use of the language in everyday situations. Prerequisite: SPN 103 or equivalent.

201-4, 202-4 Second-Year Spanish
Grammar review, reading, and discussion of selected texts with practice in speaking and writing the language. Must be taken in sequence. Prerequisite: SPN 103 or equivalent.

203-4 Second-Year Spanish
Continuation of SPN 202 with an emphasis on speaking and writing the language. Prerequisite: SPN 202 or equivalent.

Advanced Courses
SPN 202 or equivalent is the minimum prerequisite for all advanced Spanish courses.

301-4, 302-4 Spanish Literature
Historical survey of Spanish literature. 301: from the beginning to Romanticism. 302: Romanticism to the present.

321-4, 322-4 Spanish Composition
Oral and written composition in Spanish; translations from English into Spanish.

331-4, 332-4 Spanish-American Literature
Reading of prose, poetry, and plays by Spanish-American writers. 331: from pre-Columbian times to Romanticism. 332: Romanticism to the present.

341-4, 342-4 Spanish Conversation
Practice in oral use of Spanish emphasizing the culture of the Hispanic world.

361-2 Spanish Phonetics
Study of the vowel and consonant sound system through phonetic method; intonation.

381-1, 382-1, 383-1 Applied Elementary Spanish Instruction
Spanish majors assist elementary course instructors in conducting classes. For Spanish majors only. Permission of instructor required.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of Spanish

The following courses require SPN 302 or 322 or permission of instructor, in addition to the listed prerequisites:

401-4 The Spanish Picaresque Novel
Intensive reading of such works as Lazarillo de Tormes, Vida del Buscon, and Guzman de Alfarache.

402-4 The Spanish Novel of the Nineteenth Century
Nineteenth-century prose work by Galdos and others.

403-4 Advanced Studies: Language/Civilization
Variable content. Topic chosen by instructor. Conducted in Spanish. Prerequisite: SPN 342 or permission of instructor.

411-4 Golden Age Drama
Intensive readings of dramas by playwrights of the sixteenth and seventeenth centuries.

412-4 Modern Drama
Intensive readings of dramas by playwrights of the nineteenth and twentieth centuries.

421-4, 422-4 Cervantes
Intensive study of the works of Cervantes, including Don Quixote, novelas ejemplares, entremeses, and longer dramatic works. Lectures, discussions, and oral reports on Cervantes and his time.

431-4 Seminar in Spanish Literature
Intensive study of selected topics in peninsular literature. Background lectures, oral reports, and discussions. Topics vary from quarter to quarter.

432-4 Seminar in Spanish-American Literature
Intensive study of selected topics in Spanish-American literature. Background lectures, oral reports, and discussions. Topics vary from quarter to quarter. Prerequisite: SPN 332 or permission of instructor.

441-4 Contemporary Spanish Literature
Reading in the novel, poetry, and drama of major Spanish writers in the post-Civil War period.

442-4 Contemporary Latin-American Literature
Readings in the novels, poetry, and drama of various Latin-American writers from the late 1930s to the present. Prerequisite: SPN 332 or permission of instructor.

450-1 to 4 Undergraduate Research in Spanish
Topics vary from quarter to quarter.
462-4 The Generation of 1898
Novel, poetry, and theatre of Unamuno, Baroja, and others.

471-4 Introduction to Historical and Comparative Linguistics
(Listed jointly with Linguistics; see LI 471.)

481-4, 482-4 Independent Reading for the Advanced Student
Topics vary from quarter to quarter.

Statistics/STT

164-3 Elementary Statistics I
Numerical descriptive methods; the axioms of probability, events; random variables; expected values; introduction to the binomial and normal distributions. Adequate high school preparation required. Prerequisite: MTH 127 or equivalent or at least Level 4 on math placement test.

165-1 Elementary Statistics Laboratory I
Data-oriented problems in descriptive statistics and probability at the introductory level. Corequisite: STT 164.

265-3 Elementary Statistics II
Statistical inference: point and interval estimation of the mean, the binomial parameter, hypothesis testing, the t distribution, population variance. Linear regression and correlation, least squares, chi-square, and contingency tables. The analysis of variance. Examples from social, industrial, clinical, educational, and other applications. Prerequisite: STT 164.

266-1 Elementary Statistics Laboratory II
Data-oriented problems in statistical inference at the elementary level. Corequisite: STT 265.

267-2 Introduction to SAS
An introduction to the use of the Statistical Analysis System, a statistical computing package. Prerequisite: STT 265 or equivalent.

360-4, 361-4 Applied Statistics I, II
Introduction to applied probability and statistics. Data handling, using electronic calculators and packaged computer programs. Standard parametric statistical methods considered. For 360, two courses in calculus required. Prerequisite: for 361, STT 360.

363-3 Engineering Statistics
Introduction to probability, distributions, and statistical methods, using calculus to develop the necessary theory. Intended for junior engineering students who have finished the calculus sequence. Prerequisite: MTH 232.

368-4 The Design of Sample Surveys
Introduction to all phases of survey work, including preparations to launch the survey, actual conduct of operations, processing of data, and writing of the report. Sampling methods covered selected from: unequal probability, stratified, cluster, replacement, double, and simple random sampling. Completion of two courses in statistics required.

366-1 to 5 Independent Reading in Statistics and Probability
Topics vary from quarter to quarter. Permission of instructor required.

401-4 Nonparametric Methods
Distribution-free estimation and hypothesis testing procedures. Includes methods for use in one- and two-sample location and dispersion problems, nonparametric alternatives to ANOVA and regression, goodness-of-fit tests, measures of association, and tests for randomness. Prerequisite: STT 466 or equivalent.

424-4 Statistical Control Methods for Quality and Productivity I
Control charts including adaptations, acceptance sampling for attributes and variables data, acceptance plans, sequential analysis, statistics and probability distributions, and applications. Prerequisite: STT 360 or 363 or permission of instructor.

461-4 Theory of Statistics I
Probability models, density and distribution functions, expectation, marginal and conditional distributions, stochastic independence, moment generating functions, central limit theorem, decision theory, and estimation of parameters. Prerequisite: STT 361, MTH 232, or permission of instructor.

462-4 Theory of Statistics II
Hypothesis testing, linear model, and nonparametric methods. Prerequisite: STT 461 or permission of instructor.

466-4 Statistical Methods I
Classical statistical techniques for analysis and interpretation of research data, with heavy emphasis placed on the use of packaged computer routines. Includes descriptive statistics, normal distributions, one- and two-sample t-tests, sample contingency table analysis, simple linear regression and correlation. Introduction to analysis of variance. Prerequisite: STT 265 or 361 or permission of instructor.

467-4 Statistical Methods II
Continuation of STT 466. Includes further topics in analysis of variance, multiple and curvilinear regression, multiple and partial correlation, analysis of covariance, some exploratory data analysis. Prerequisite: STT 466.
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469-4 Introduction to Experimental Design
Use of techniques of experimental designs, blocking, Latin squares, regression design. One or more statistical computing packages are used to analyze resulting data. Emphasis is placed on applications to various areas of scientific research. Prerequisite: STT 467 or equivalent.

486-1 to 5 Independent Reading in Statistics and Probability
Permission of instructor required.

496-1 to 5 Topics in Statistics and Probability
Permission of instructor required.

Study Skills/SS

Credit for Study Skills Courses
Credit for these courses does not count toward a degree.

087-1 College Study Strategies
This course offers "how to" advice on topics such as note-taking, time management, preparing for exams, textbook skills, memory training, library usage, etc. Individual and group study-counseling offered as time permits.

089-3 Fundamental English Skills I
Helps students develop and improve writing skills. Subject areas include grammar, sentence structure, and paragraph development.

091-3 Reading Improvement
Individual instruction designed to help students improve reading skills. Demonstrates how to improve levels of concentration, comprehension, and retention. Special topics include vocabulary and spelling enrichment and research.

092-3 Fundamental English Skills II
Builds on skills developed in SS 089. Helps students write grammatically correct, logical, concisely organized papers and themes. Course covers paragraph development and concludes with the writing of a 200- to 300-word theme. Prerequisite: SS 089 or equivalent.

093-3 Basic Math Skills
Available to students who need help in arithmetic functions. Topics include properties of whole numbers, primes and composites, arithmetic operations, decimals, ratios, rates, proportions, percents, and elementary algebra functions. Following first-time completion with a grade of P and departmental permission for additional skill development, a student may enroll in this course a second time. The second enrollment should be considered a course continuation rather than a course repeat.

094-3 Critical Reading Improvement
Critical analysis of content area readings. Emphasis is on recognizing organizational patterns, distinguishing fact from opinion, problem solving, logical reasoning, recognizing author's background, intent, attitude, bias, and tone; making inferences; recognizing propaganda and persuasive writing.

095-3 Fundamentals of Oral Communication
Provides a background in the essential elements of functional oral communication and offers opportunities for students to improve the quality of their communication skills. 1 hour lecture, 2 hours lab. May be taken for letter grade or pass/unsatisfactory. Enrollment limited to federal grant Special Services Program participants.

096-3 Psychology Concepts
An individualized course designed to introduce students to the field of psychology and to specific psychological principles, concepts, and terminology. May be taken for letter grade or pass/unsatisfactory. Enrollment limited to federal grant Special Services Program participants.

097-3 Biology Survey
Focuses on building a vocabulary of biological terms and acquaints students with the concepts involved in the study of cell biology, heredity, and evolution. 3 hours lecture, 2 hours lab. May be taken for letter grade or pass/unsatisfactory. Enrollment limited to federal grant Special Services Program participants.

098-3 Chemistry Survey
Provides an overview and an understanding of twelve principal topics taught in general chemistry. 3 hours lecture, 2 hours lab. May be taken for letter grade or pass/unsatisfactory. Enrollment limited to federal grant Special Services Program participants.

099-3 Geology Survey
Designed for students with no prior knowledge of geology. Provides an overview of basic geological concepts, terms, and their application to everyday living. 3 hours lecture, 2 hours lab. May be taken for letter grade or pass/unsatisfactory. Enrollment limited to federal grant Special Services Program participants.

Theatre/TH
See Motion Pictures/TH and Dance/DAN for additional course listings.

101-4 The Arts of the Theatre
Develops understanding and appreciation of drama and the theatre. Critical analysis of the theatre as art form: includes functions of playwright, actor, director, critic, designer, and theatre architect.
102-3 **Introduction to Technical Theatre**
General survey of technical aspects of theatre including its personnel and organization.

110-1 to 3 **Theatre Arts Activities**
Participation in University Theatre productions; specific assignments determined at initial meeting. May be repeated for credit. A maximum of six quarters applicable to requirements for theatre major.

120-3 **Makeup for the Theatre**
Theory and practice of stage makeup. Prerequisite: TH 101, 102.

124-2, 125-2, 126-2 **Theatre Graphics I**
Drawing for the theatrical designer. Exploration of media and concepts. Prerequisite: for 125, TH 124 or permission of instructor; for 126, TH 125 or permission of instructor.

144-4, 145-4, 146-4 **Acting I**
Training imagination, mind, body, and voice of the beginning actor. Must be taken in sequence. All students in the acting program must receive a grade of C or better to continue in the sequence.

147-3, 148-3, 149-3 **Acting Aesthetics**
A generalized acting course which includes various aspects of movement, vocal technique, improvisation, and scene work. Designed for students who are emphasizing the technical areas of the arts. Enrollment limited to technical design majors. Departmental approval required for TH 148 and 149. Prerequisite: for 148, TH 147; for 149, TH 148.

154-1, 155-1, 156-1 **Theatre Speech I**
Through physical exercise and sensory improvisation, the student learns correct vocal placement and support to enable him/her to develop an effective, efficient, stageworthy voice. Particular emphasis on corrective coaching of individual speech problems. Prerequisite: for 155, TH 154; for 156, TH 155. Corequisite: for 154, TH 144; for 155, TH 145; for 156, TH 146.

203-3 **Contemporary Theatre**
Critical study of contemporary theatre and its standards and production methods. Attendance at several current productions required. Theatre tickets must be purchased by the student. Prerequisite: TH 101.

220-3 **Stagecraft**
Introduction to theory and practice of executing stage scenery with a study of the materials and techniques involved. Includes practice in construction and mounting of productions. Lab hours to be arranged. Permission of instructor required. Prerequisite: TH 102.

224-3, 225-3, 226-3 **Theatre Graphics II**
Instruction in and practice with the basic graphic tools, materials, and techniques used in theatre design. Includes freehand sketching, calligraphy, mechanical drawing, and painting techniques. Sophomore standing as a theatre major required. Prerequisite: for 224, TH 102, 126; for 225, TH 224; for 226, TH 225.

227-3 **Stage Lighting Technology**
Mechanics of stage lighting, including behavior of light, lighting instruments, and control systems. Includes study of the functions and duties of the stage lighting technician. Lab hours to be arranged. Permission of instructor required. Prerequisite: TH 102.

229-3 **Costume Technology**
Introduction to two- and three-dimensional techniques for drafting period garments. Products and techniques used in aging and distressing theatrical costumes. Lab hours to be arranged. Permission of instructor required. Prerequisite: TH 102.

244-3.5, 245-3.5, 246-3.5 **Acting II**
Second year of acting emphasizing character study. Emphasis placed on audition at the end of spring quarter. Must be taken in sequence. All students in the acting program must receive a grade of C or better to continue in the sequence. Prerequisite: for 244, TH 146.

254-1, 255-1, 256-1 **Theatre Speech II**
The second year of speech focuses on expansion and strengthening of the actor’s voice. Special emphasis placed on clear articulation and proper enunciation of the phonemes of American Standard English. Prerequisite: for 254, TH 156; for 255, TH 254; for 256, TH 255. Corequisite: for 254, TH 244; for 255, TH 245; for 256, TH 246.

257-0.5, 258-0.5, 259-0.5 **Theatre Chorus**
Vocal training with emphasis on choral singing for musical theatre. Prerequisite: for 258, TH 257; for 259, TH 258. Corequisite: for 257, TH 244; for 258, TH 245; for 259, TH 246.

290-3 **Theatre Management**
Operational procedures for school, community, and professional theatre. Includes problems of organization, personnel, budgeting, purchasing, accounting, ticket sales, publicity, promotion, and house management. Prerequisite: TH 101.

301-3 **Design for the Theatre: Art On Stage**
Design for the theatre presented as a recognized art form. The analysis of theatre design, costumes, lights, and sets as graphic arts, and in relation to the other theatrical art forms. Prerequisite: TH 101, 102.
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304-4 Dramatic Writing
Theory and practice of the techniques of dramatic writing, emphasizing the writing of original plays. Prerequisite: ENG 111, 112, or permission of instructor.

310-1 to 3 Theatre Arts Management Practicum
Participation in University Theatre Arts Management activities. Specific assignments determined at initial meeting. May be repeated for credit. A maximum of twelve credit hours applicable to degree requirements for theatre majors.

311-3 Oral Reading of Drama
Analysis and practice in reading from plays and dramatic poetry; reader's theatre; performance.

320-6 Applied Theatre Technology I
Practical study in technical execution. Emphasis on daily operation of theatre production facilities and shops. Participation in all major department productions required. A maximum of eighteen credit hours applicable toward degree. All design/technology majors with junior standing must be enrolled in this class each quarter. Enrollment limited to B.F.A. design/technology majors. Permission of instructor required. Prerequisite: fifteen hours of TH 110; TH 220, 227, 229.

324-3, 325-3, 326-3 Theatre Design I
Study of scenic, costume, and lighting design and the analysis of period fashion, interior decor, and architecture used by designers. Includes project design work with an emphasis on professional technique. Prerequisite: for 324, TH 226 and 301 or permission of instructor; for 325, TH 324; for 326, TH 325.

340-2, 341-2, 342-2 Movement for the Actor I
Basic movement skills such as period movement, dancing, and stage combat as they relate to performing; designed to give the performer total perception and to discover the physical and psychological stimulus for movement. Enrollment limited to studio acting majors. Must be taken in sequence. Prerequisite: for 340, TH 246.

344-3.5, 345-3.5, 346-3.5 Acting III
First year of Professional Actor Training program. Must be taken in sequence. All students in the acting program must receive a grade of C or better to continue in the sequence. Admission by audition only. Prerequisite: for 344, TH 246.

350-4 Directing
Problems of script selection and interpretation, casting, rehearsing, and performance. Techniques of composition and movement, the proscenium stage and open stage. Preparation of the prompt book. Prerequisite: TH 244.

352-2 Directing Laboratory
Presentation of a one-act play in the studio theatre for departmental and public audiences. Prerequisite: TH 350.

354-1, 355-1, 356-1 Theatre Speech III
Speech for the classical stage. Emphasis on unique demands of communication of dramatic verse text through exploration of Shakespeare, Molière, and Restoration playwrights. Particular attention given to diction or the art of emphasis to illuminate poetic language. Prerequisite: for 354, TH 256; for 355, TH 344; for 356, TH 355. Corequisite: for 354, TH 344; for 355, TH 345; for 356, TH 346.

357-0.5, 358-0.5, 359-0.5 Theatre Chorus
Vocal training with emphasis on choral singing for musical theatre. Prerequisite: for 357, TH 259; for 358, TH 357; for 359, TH 358. Corequisite: for 357, TH 344; for 358, TH 345; for 359, TH 346.

360-3 The History of the Theatre I
A survey of the history and development of theatrical production from the Greeks through the Renaissance and including primitive forms both ancient and contemporary. Emphasis on the history of play production rather than on literature. Prerequisite: TH 101.

361-3 The History of the Theatre II
A survey of the history and development of theatrical production from the seventeenth century through the present day. Emphasis on the history of play production. Prerequisite: TH 101.

362-3 Style and Concept
An investigation of the development of production concept in terms of visual and intellectual style choices in performance, interpretation, and design. For theatre arts majors only. Junior or senior standing and permission of instructor required.

365-3 Theory and Criticism
Changing concepts of dramatic structure and criticism through comparative examination of works of selected playwrights and critics. Chief theories of dramatic production in relation to aesthetic principles.

366-3, 367-3, 368-3 Theatre Repertoire I, II, III
Special problems of analysis, acting, and staging plays from various periods of theatre history are explored from a production point of view. 366: from Aeschylus to Jonson. 367: from Beaumont to Chekhov. 368: from Shaw to Albee.

370-3 Creative Dramatics
Study of the nature of creativity in children and of the techniques which develop sensitivity, bodily freedom, characterization, and impression.
390-2 to 4 Projects in Theatre
Advanced individual work. Students should submit prospectus for departmental approval by the middle of the quarter preceding registration.

399-1 to 4 Studies in Selected Subjects
Course of variable content dealing with problems, approaches, and topics in the field of theatre.

410-1 to 3 Stage Management Practicum
Participation in university theatre stage management activities. Specific assignments determined at initial meeting. May be repeated for credit. A maximum of six credit hours applicable to degree requirements for theatre majors. Permission of instructor required.

412-3 Advanced Stage Makeup
Design and application of the advanced makeup techniques of prosthetics, hair ventilation, and wig making. Prerequisite: TH 120.

420-6 Applied Theatre Technology II
Courses offered under this number provide intensive study of selected aspects of technical theatre. Specific titles are announced each time course is offered. Senior standing in design/technology program, permission of the head of the design/technology program, and eighteen credit hours of TH 320 required.

424-6, 425-6, 426-6 Theatre Design II
Intensive study of theatrical costumes, scenery, and lighting, with a focus on script interpretation. Includes practical design work with an emphasis on produced designs, professional development, and specialization in the student's area of design. Must be taken in sequence. Permission of instructor required for TH 424. Prerequisite: for 425, TH 424; for 426, TH 425.

427-3 Advanced Stagecraft
An advanced study of stagecraft practices including complex scenery layout, rigging, power drive systems, and materials. Enrollment limited to B.F.A. design/technology majors. Permission of instructor required. Prerequisite: TH 220, 227, 229.

428-3 Advanced Costume Technology
Advanced techniques of costume technology with emphasis on developing patterns, cutting and draping, and drafting. Enrollment limited to B.F.A. design/technology majors. Permission of instructor required. Prerequisite: TH 220, 227, 229.

429-3 Advanced Theatre Crafts
A lecture/workshop class with variable topics including property making, furniture building for the stage, and scenic painting. Specific topics announced each quarter course is offered. May be repeated for credit. Enrollment limited to B.F.A. design/technology majors. Permission of instructor required.

440-2, 441-2, 442-2 Movement for the Actor II
Visualizing techniques along with specific analysis of the ideas of LeCoq, Marceau, Alexander, Davis, and others. Must be taken in sequence. Enrollment limited to B.F.A. studio acting majors. Prerequisite: for 440, TH 342; for 441, TH 440; for 442, TH 441.

444-3.5, 445-3.5, 446-3.5 Acting IV
Second year of Professional Actor Training program. Must be taken in sequence. All students in the acting program must receive a grade of C or better to continue in the sequence. Prerequisite: for 444, TH 346.

447-3, 448-3 Acting Thesis Project
Intensive work on a final creative performance project. Enrollment limited to acting studio seniors. Departmental approval required. Prerequisite: TH 444.

450-3 Studies in Directing
Courses offered under this number provide intensive study of selected aspects of directing for the theatre. Specific title announced each time course is offered. Departmental approval required.

451-3, 452-3 Directing Thesis Project
Original directed research culminating in a creative performance project. Enrollment limited to B.F.A. directing majors. Departmental approval required. Prerequisite: TH 352.

454-1, 455-1, 456-1 Theatre Speech IV
Thorough analysis and study of sounds of foreign dialects and regional accents. Student explores transformation of his or her own voice. Additionally, student learns to vary stage voice for age and character roles. Prerequisite: for 454, TH 356; for 455, TH 454; for 456, TH 455. Corequisite: for 454, TH 444; for 455, TH 445; for 456, TH 446.

457-0.5, 458-0.5, 459-0.5 Theatre Chorus
Vocal training with emphasis on choral singing for musical theatre. Prerequisite: for 457, TH 359; for 458, TH 457; for 459, TH 458. Corequisite: for 457, TH 444; for 458, TH 445; for 459, TH 446.

460-3 Studies in Theatre History
Courses offered under this number provide intensive study of selected aspects of theatre history. Specific title announced each time course is offered. Departmental approval required.

470-3 Studies in Child Drama
Courses offered under this number provide intensive study of selected aspects of children's theatre and creative dramatics. Specific title announced each time course is offered. Departmental approval required.

491-3 Seminar in Theatre
Selected topics in theatre. Permission of instructor required.
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495-3 to 12 Workshop in Theatre
Intensive study of special topics or problems or
intensive experience in theatrical presentation,
according to particular needs of participants.
Specific titles to be announced for each
workshop. May be repeated for credit. Junior or
senior standing or permission of instructor
required.

498-12 to 15 Professional Theatre Internship
Placement of superior upper-division B.F.A.
theatre majors in various professional theatres
as management or production interns.
Enrollment limited to B.F.A. theatre majors.
Junior or senior standing and departmental
approval required.

University Division/UD
101-1 Freshman Seminar: The University Experience
Overview of higher education, nature of
scholarly study, academic requirements and
organization of the university, selection of
degree programs, characteristics of
academically successful students, study
strategies, and academic coping skills. For
freshmen only. Cannot be applied toward
minimum 183 credit hours for a baccalaureate
degree.

University Honors/UH
101-1 to 4 Directed Study
Faculty-directed research or reading. Student
proposals require approval from the University
Honors Committee. Enrollment limited to
freshman honors scholars. May be repeated to
a maximum of twelve credit hours.

201-3 to 4 Studies in the Humanities
Explores the humanities comparatively,
stressing similarities and differences in themes,
methods, materials, theoretical constructs, and
problems, focusing on such topics as humanity
and freedom or the city and the individual.

202-3 to 4 Studies in the Social Sciences
Explores the social sciences comparatively,
stressing similarities and differences in themes,
methods, materials, theoretical constructs, and
problems, focusing on such topics as people
and groups or institutions and bureaucracies.

203-4 Studies in the Natural Sciences
Varying topics or issues in the natural sciences
approached in an interdisciplinary framework.
Course permits intensive coverage of subject
matter while also focusing on the
interrelationships of the natural scientific
disciplines. Enrollment limited to honors
students. Completion of two quarters of a lab
science approved for General Education credit
required.

400-3 to 4 University Honors Seminar
Course of variable content, with emphasis on
broadly interdisciplinary topics or issues.
Enrollment limited to juniors and seniors with
grade point averages of 3.0 or higher.

Urban Affairs/URS
211-4 Introduction to Urban Affairs
Interdisciplinary introduction to general field of
urban affairs. Reviews "idea of the city" and
meaning of urban life.

399-1 to 6 Studies in Selected Subjects
Course of variable content dealing with
problems, approaches, and topics in the field of
urban affairs.

411-4 Seminar in Urban Affairs
Includes development of a major research
paper and a bibliography in urban affairs.
Enrollment limited to seniors in urban affairs.
Permission of instructor required.

490-1 to 4 Special Topics
Advanced study in selected topics in urban
studies. Topics may include new developments
in methodology or the various subfields of the
discipline. May be repeated to a maximum of
eight credit hours.

492-6 Urban Affairs Internship
Senior-level internship in which the student
works in the offices of a local public agency.
Enrollment limited to urban affairs majors. May
be repeated once. Permission of instructor
required.
Technical Course Descriptions
Offered only at WOBC
The following technical courses are part of technical education programs leading to associate degrees and are offered only at the Western Ohio Branch Campus.

**Technical Courses**

**Engineering Technology/TEG**

**125-3 Beginning Architectural Design**
Contemporary architecture, urban planning, landscape architecture, interior design, flow diagrams, and preliminary presentations. 1 hour lecture, 4 hours lab.

**141-3 Development of Engineering and Technology**
History and concepts of machine design and relations between machines and culture. Emphasis on dependence of a complex culture on the machines that serve it. Relations between engineering and science explored in several subject areas. Field trips included.

**145-4 Engineering Drawing I**
Covers the basic use of drafting instruments, lettering, geometric constructions, multiview projections, sectional views, dimensioning, pictorial drawings, and charts and graphs. Application to the design process. 2 hours lecture, 4 hours lab.

**146-4 Engineering Drawing II**
This course emphasizes the design process in the development of mechanical drawings. Topics covered include: tolerancing, threads and fasteners, design and working drawings, welding representations, assemblies, specifications, and material lists. 2 hours lecture, 4 hours lab. Prerequisite: TEG 145.

**147-4 Engineering Drawing III**
Study of graphical analysis and the solution of three-dimensional space problems using descriptive geometry. Fundamental problems involving points, lines, planes, intersections, revolutions, and developments are emphasized. In addition, geometric tolerancing is introduced. Skills developed are applied to the design of machine elements. 2 hours lecture, 4 hours lab. Prerequisite: TEG 146.

**148-3 Electronic Drawing**
Drafting course for students in electronics technology. Topics covered are preparation of electrical drawings including block and ladder diagrams, pictorial and schematic wiring diagrams, and printed circuit layouts. Stresses use of electrical and electronic symbols and nomenclature. 1 hour lecture, 4 hours lab.

**150-4 Tool and Manufacturing Processes I**
An introduction to many of the basic tools, machines, and measuring instruments used in the manufacturing industry. The student is trained to safely operate industrial metalworking equipment, understand material cutting science, and make logical process decisions. 2 hours lecture, 4 hours lab.

**151-4 Tool and Manufacturing Processes II**
An advanced study of industrial metalworking applications using auxiliary tools with the basic machines. The student learns the sophisticated procedures of threading, indexing, and rotary setups. Gear cutting and tool and cutter grinding: nontraditional metalworking methods are studied. 2 hours lecture, 4 hours lab. Prerequisite: TEG 150 or equivalent.

**152-5 Tool and Manufacturing Processes III**
An introduction to the operation and manual programming of computer-numerically-controlled metalworking machinery. The student learns the process of writing and editing programs for the computer control of a three-axis milling machine. 4 hours lecture, 2 hours lab. Prerequisite: TEG 151 or equivalent.

**153-3 Tool and Manufacturing Processes IV**
Advanced computer programming techniques, computer aided manufacturing (CAM), a look at manufacturing resources planning (MRP), computer integrated manufacturing (CIM), and the automated factory of the future (AF). 1 hour lecture, 4 hours lab. Prerequisite: TEG 152 or equivalent.

**160-4 DC Circuit Analysis**
This course introduces the concepts of electricity including current, voltage, power, and energy. Series, parallel, and series-parallel circuits are covered along with application of these circuits. Network analysis and an introduction to capacitance and inductance are studied. 2 hours lecture, 4 hours lab. Prerequisite: TEG 152 or equivalent.

**161-4 AC Circuit Analysis**
This course introduces inductive and capacitive reactance and covers capacitive and inductive time constants. AC signal generation, AC wave forms and impedance. Series, parallel, and series-parallel AC circuits are covered along with applications of these circuits including filters and resonance. Single-phase and three-phase transformer analyses are introduced. Emphasis in lab is on the oscilloscope including lissajous signal analysis, function generator, and VTUM for application in AC circuit analysis. 2 hours lecture, 4 hours lab. Prerequisite: TEG 160, TMT 113.
170-4 Computer Aided Drafting/Design
Introduction to current means of generating graphic designs with computers. Lab time includes dimensioning, orthographic projections, sectioning, pictorials, and working drawings created with the computer. 3 hours lecture, 2 hours lab. Prerequisite: TEG 147.

200-4 Electronic Communication
Operation, maintenance, troubleshooting, and adjustment of power supplies, audio and radio frequency amplifiers, audio and radio frequency oscillators are studied as individual units and as a complete operating system. 2 hours lecture, 4 hours lab. Prerequisite: TEG 210.

201-4 Engineering Mechanics I: Statics
Forces, resultants, components, moments; equilibrium of particles and rigid bodies; analysis of structures, centroids and moments of inertia. 2 hours lecture, 4 hours lab. Prerequisite: TMT 115, TPH 111.

202-4 Engineering Mechanics II: Dynamics
Motion of particles and rigid bodies; displacement, velocity, acceleration, force, and mass; torque, mass moments of inertia, rotation; work-energy relation for particles and rigid bodies. 2 hours lecture, 4 hours lab. Prerequisite: TEG 201.

203-4 Strength of Materials
Axial stress and strain, shear stress and strain, torsion of circular shafts, combined stresses; shear and bending moment diagrams; deflection of beams and columns; modes of failure. 2 hours lecture, 4 hours lab. Prerequisite: TEG 202.

204-3 Machine Design
Principles of mechanics and strength of materials as applied to components of mechanisms, power trains, beams, and other bodies under static load. Material selection, fasteners, belt, chain, and gear drives; design of castings, weldments, jigs, and fixtures. Skills developed are applied to the design and selection of machine elements. 2 hours lecture, 2 hours lab. Prerequisite: TEG 212, TMT 115.

205-3 Design Analysis
Design as a process: engineering graphics and digital computers as tools for problem solution. Application of the design analysis method to problems involving industry. 2 hours lecture, 2 hours lab. Prerequisite: TEG 145, TMT 114.

209-4 Fluid Mechanics
Basic study of hydraulics and pneumatics. Applications of fluid mechanics including pressure, density, and viscosity in design circuits and systems. 3 hours lecture, 2 hours lab. Prerequisite: TPH 111.

210-4 Electronics I
Study of the application of semiconductor devices in simple and complex circuits. Topics include small-signal and power amplifiers, feedback and frequency response. 2 hours lecture, 4 hours lab. Prerequisite: TEG 148, 161.

212-3 Materials and Processes
Metallic, organic, and inorganic substances. Study of the characteristics and fabrication of such substances, testing procedures, and interpretation of data. Several industrial field trips. 2 hours lecture, 2 hours lab.

218-3 Industrial Plant Layout
Material flow, warehousing, quantitative techniques, planning, estimating, and design of industrial facilities with emphasis on production layout, management, personnel, aesthetics, and the environment. Prerequisite: TEG 201.

219-3 Industrial Safety
Introduces a comprehensive approach to the central factors involved in developing safe practices and conditions. Imparts the ability to set up safety organizations and conduct safety education and training. Encourages the ability to recognize the effect of plant layout, mechanical guards, and occupational health hazards on injury rates and accident costs. Imparts the economic and engineering aspects of fire protection, personal protection equipment, industrial waste disposal, and the analysis of a safety program.

220-4 Electronics II
Study of bipolar transistor amplifiers that includes graphical analysis techniques, transistor parameters, equivalent circuits, power amplifiers, frequency effects, feedback circuits, and special purpose amplifiers. Theory supported by laboratory experiments. 2 hours lecture, 4 hours lab. Prerequisite: TEG 210.

221-4 Electro-Mechanical Controls
Introduction to computer architecture. Course develops the use of programmable controllers for machine control. Topics include DC servos, AC servos, and hydraulic servos. Course continues with computer-based control of robotic systems. Discussions of current robotic sensors such as proximity sensing, touch, and vision are included. 2 hours lecture, 4 hours lab. Prerequisite: TEG 230.

223-4 Basic Tool and Die Making
Theory of cutting and forming metal dies and the concepts of making tools to function properly. Lab experiments help solidify the theory. 3 hours lecture, 2 hours lab. Prerequisite: TEG 151 or permission of instructor.
256 Courses/Engineering Technology

225-3 Motion and Time Study
Acquaints the student with the basic tools of motion and time study and the part they play in industrial organizations. Imparts a knowledge of the collection of time and motion data and operation analysis, and an ability to relate motion economy, rating techniques, activity charts, and graphical techniques of presentation. Includes evaluation and use of work simplification methods. Prerequisite: TMG 201.

226-3 Metallurgy
Deals with the terminology and designations of materials used in manufacturing and emphasizes the relation between the nature of materials and their properties. The altering of properties for design purposes and methods of comparing and testing materials for selection are covered. 2 hours lecture, 2 hours lab.

230-4 Electronics III
Advanced laboratory and theoretical study of vacuum tubes, unijunction transistor, tunnel diode, field effect transistor, diac, triac, silicon control rectifier, and integrated circuits. 2 hours lecture, 4 hours lab. Prerequisite: TEG 220.

232-4 Industrial Electronics
Laboratory and theoretical study of transformers, motors, generators, gas tubes, phase shift control, photo-electric control, time delay circuits, static switching, and servomechanisms. Integrates electronics with industrial applications of electricity. 2 hours lecture, 4 hours lab. Prerequisite: TEG 210.

233-3 Control Systems I
A general study of the principles of variance to be controlled; energy transfers; mechanical, electrical, hydraulic, and pneumatic control systems. 2 hours lecture, 2 hours lab. Prerequisite: TEG 161, 209.

234-3 Control Systems II
A continuation of TEG 233. This course deals with programmable closed loop control systems as used in the control industry. Topics include programmable controllers, direct digital controllers with proportional-integral-differential (P/I/D) control algorithms capability, distributed control systems using local controllers with a central host system, data highways, multi- variable systems, and nonlinear systems. 2 hours lecture, 2 hours lab. Prerequisite: TEG 233.

235-4 Laser Optics I
Emission and absorption of photons, elements of laser, properties of laser light, optical cavities, helium-neon gas lasers, and laser classifications and characteristics. Introduction to laser safety. 3 hours lecture, 2 hours lab. Prerequisite: TMT 114, TPH 112.

236-4 Fiber Optics
Introduction to fiber optics; review of the nature of light, reflection, refraction, light measurement; light sources and transmitters; optical fibers—physical description, light propagation, transmission losses; splices. Connectors and couplers; receivers—pin photodiodes, avalanche photodiodes, and photo-transistors; typical systems. 3 hours lecture, 2 hours lab. Prerequisite: TEG 235, TPH 112.

240-4 Digital Logic
Classroom-laboratory study of digital number systems, binary codes, Boolean algebra, logic gates, combinatorial logic, and minimization of logic functions and circuits. Laboratory work consists of design, implementation, and testing of logic combinational circuits using digital trainers and integrated logic circuits. 2 hours lecture, 4 hours lab. Prerequisite: TEG 161, TMT 114.

241-4 Digital Circuits I
Study of flip-flops, counters, registers, synchronous and asynchronous sequential circuits, encoders, decoders, memory devices, display devices, A/D and D/A converters, data-handling techniques, and computer/microprocessor architecture. Laboratory work consists of design, implementation, and testing of logic combinational circuits using integrated logic circuits. 2 hours lecture, 4 hours lab. Prerequisite: TEG 240, TMT 115.

242-4 Digital Circuits II
This course continues with microprocessor hardware which includes memories, RAMS, ROMS, PROMS, and EPROMS. It also includes ALU units with A/D and D/A conversions. Course continues with microprocessors, microcomputers, architecture, CPU, and bus structures. The application of microprocessor interfacing with laboratory systems is discussed. 2 hours lecture, 4 hours lab. Prerequisite: TEG 241, TMT 115.

243-4 Digital Circuits III
Microprocessor applications. Continuation of TEG 242. Emphasis is on interfacing microprocessor systems to real-world tasks. Applications include parallel input and output; D/A and A/D converters; serial communications and use of the microprocessor as an intelligent controller. 2 hours lecture, 4 hours lab. Prerequisite: TEG 242, TMT 138.
250-4 **Operational Procedures and Regulations**
An overview of theory and regulations associated with operation of two-way radio equipment. Covers laws and technical standards as they apply to two-way radio systems. Weekly examinations provide study guides and review of the topics necessary to pass the FCC examination for first-class radiotelephone operator's license. Prerequisite: TEG 220.

251-4 **Motor and Generator Design**
Advanced classroom-laboratory study of DC and AC motor and generator construction with particular attention to rotor and field windings, commutators and slip rings, insulations, copper, iron, and mechanical losses. Laboratory work entails confirmation of classroom studies through examination and testing of generators. Motors or generators are designed to meet given parameters. 2 hours lecture, 4 hours lab. Prerequisite: TEG 161.

252-4 **Transformers and Devices**
Study of various devices normally found in conventional electrical systems including transformers, relays, circuit breakers, motor starters, automatic switches and controllers, single-phase and polyphase power rectifiers, and servo systems. Laboratory work establishes operational characteristics and uses of devices considered in classroom. 2 hours lecture, 4 hours lab. Prerequisite: TEG 161.

253-4 **Industrial Motors and Controls**
Fundamentals, applications, and selection of DC and three-phase AC motors including speed torque characteristics, horsepower, and efficiency calculations. Relay, static, and programmable control circuits emphasizing equipment and personal protection, across-the-line starting, acceleration methods, speed control, reversing, plugging, sequencing, counting, breaking, and jogging are analyzed, constructed, designed, and diagnosed for improper operation. 2 hours lecture, 4 hours lab. Prerequisite: TEG 161.

254-4 **Introduction to Microprocessors and Microcomputers**
Introduces the student to microprograms and other firmware and examines the electrical and mechanical (hardware) aspects of the microprocessor. Students are exposed to the basic parts of an instruction set and are required to devote part of their learning experiences to important hardware such as RAM, ROM, UARTS, I/O devices, PROMS, EPROMS, accumulators, and registers. Students are required to accomplish lab sequences involving these components and concepts. 2 hours lecture, 4 hours lab. Prerequisite: TEP 130.

260-3 **Welding Processes**
Welding processes in joining metals, strength of materials in welded joints, technological developments in the welding industry and welded materials. Laboratory involves field trips and introduction to gas, arc, TIG, MIG, and resistance welding equipment. 1 hour lecture, 4 hours lab.

261-3 **Welding Processes: Advanced**
Advanced course in the use of flux core, submerged arc, arc-gouging, and out-of-position welding. Cost effectiveness, production methods, maintenance, and design of part joint and holding fixtures are covered. 1 hour lecture, 4 hours lab. Prerequisite: TEG 260.

295-1 to 4 **Independent Study**
Directed studies on selected topics. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

296-1 to 5 **Studies in Selected Topics**
Course of variable content dealing with problems, approaches, and topics in the field of engineering. May be taken for letter grade or pass/unsatisfactory. May be repeated with different titles.

299-4 **Internship**
Practical industrial experience for a qualified student in his or her major under the joint planning and coordination of faculty, student, and industrial representative.

**Technical Accountancy/TAC**

201-3, 202-3, 203-3 **Accounting Concepts and Principles I, II, III**
Introduction to accounting for business enterprises, including preparation and analysis of financial statements and reports for managers and other users. Must be taken in sequence.

210-3, 211-3 **Financial Accounting I, II**
Principles and procedures in accounting for assets, liabilities, equity, and results of operations for business enterprises. Prerequisite: for 210, TAC 203; for 211, TAC 210.

220-3, 221-3 **Cost Accounting I, II**
Practice of cost accounting and cost procedures in industry: job order, process, and standard cost methods. Prerequisite: for 220, TAC 203; for 221, TAC 220.

224-3 **Payroll Accounting**
Familiarization of payroll accounting systems, understanding tax laws in relation to payroll, and practical application to records and related tax forms. Prerequisite: TAC 202.
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225-3, 226-3 Tax Accounting I, II
Income tax regulations related to business and individual income tax reporting. Prerequisite: for 225, TAC 203; for 226, TAC 225.

232-3 Federal Tax Planning
Federal tax system; opportunities for effective business tax planning. Prerequisite: TAC 203.

241-3 Accounting Information Systems
Analysis of accounting information needs of an organization, alternatives for satisfying these needs, problems in implementing useful accounting information systems. Prerequisite: TAC 203.

251-3 Corporation Accounting
Branch accounting and consolidated financial statements. Prerequisite: TAC 211.

271-3 Fund Accounting
Application of accounting principles to municipalities, governmental entities, and nonprofit organizations. Prerequisite: TAC 203.

280-3 Auditing
Introduction to principles, procedures, and standards involved in the conduct of an audit by an accountant. Prerequisite: TAC 203.

290-3 Comprehensive Accounting Course
Final course to integrate the student's program into a cohesive accounting program and to promote accounting problem-solving capabilities. Prerequisite: TAC 211.

295-1 to 3 Independent Study
Directed studies in selected topics. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

297-1 to 5 Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of accounting. May be taken for letter grade or pass/unsatisfactory. May be repeated with different titles.

299-4 Internship
Practical business experience in accounting for a qualified student under the joint planning and coordination of faculty, student, and business representative.

Technical Administration/TAD

232-3 Business Law
The study of law as it relates to business organizations and transactions. Considers the nature and classification of law courts, torts, contracts, corporations, and negotiable instruments.

Technical Administrative Information Systems/TAI

103-3 Introduction to Data Processing
Data processing fundamentals and terminology pertinent to programming business systems. Students required to write and test programs. (Previously listed as TAD 103.)

Technical Automotive/TAU

100-3 Basic Automotives I
Automotive mechanics with emphasis on the language of automotives and explanation of the major automotive functions. Concentration of safety, tool identification and proper use, engine operation, fuel, and ignition systems. Covers gas and diesel. 1 hour lecture, 4 hours lab.

101-3 Basic Automotives II
A continuation of TAU 100 with concentration on brake systems, suspension systems, power trains, minor engine tune-up, and automotive electrical systems. 1 hour lecture, 4 hours lab. Prerequisite: TAU 100.

102-4 Electrical Circuits
Study and diagnosis of malfunctions in the electrical system by use of wiring diagrams and testing instruments. Special emphasis on the study of breaker point ignition, function of coils and condensers, and the use of the distributor tester. 2 hours lecture, 4 hours lab. Prerequisite: TAU 100.

111-5 Engine Diagnosis I
Study of automotive engines with emphasis placed on operating principles, theory, design, and construction of the different types of engines. Lab work consists of disassembly, overhaul, and assembly of different types of engines. 2 hours lecture, 6 hours lab. Prerequisite: TAU 100.

112-4 Engine Diagnosis II
Diagnosis and operating principles of the battery, starter, electronic and computerized ignition systems, generator, alternator, and voltage regulators with emphasis on overhaul and testing of each component. 2 hours lecture, 4 hours lab. Prerequisite: TAU 111.

113-5 Engine Diagnosis III
Tune-up and diagnostic procedures with emphasis on exhaust and emission controls, ignition and the automatic choke. Tests are performed using oscilloscopes and distributor testers. 2 hours lecture, 6 hours lab. Prerequisite: TAU 112.

201-3 Automotive Suspension Systems
Theory and laboratory work on the operation and service procedures of light and heavy duty suspension systems. Wheels, tires, steering gears, and wheel alignment techniques are also studied. 1 hour lecture, 4 hours lab. Prerequisite: TAU 100.
202-3 **Standard Transmission and Drive Line**
The operation of standard transmissions, clutches, propeller shafts, universal joints, differentials, axle shafts, and bearings used in gasoline- and diesel-powered vehicles. Disassembly and repair of these parts are accomplished in the lab. Noise, vibration, and harshness are also studied. 1 hour lecture, 4 hours lab. Basic hand tools are required. Prerequisite: TAU 101.

203-3 **Automatic Transmissions**
Covers fundamentals of operation, diagnostic procedures, and specific servicing instructions for current passenger car automatic transmissions, including overdrive. Removal, disassembly, repair, and reassembly are accomplished in the lab. 1 hour lecture, 4 hours lab. Basic hand tools required. Prerequisite: TEG 209.

207-4 **Fuel and Emission Systems**
Basic principles of the modern electronic fuel and emission systems as they are related to the internal combustion engine. Diagnosis, disassembly, and repair of carburetors and other components are covered in the laboratory. 2 hours lecture, 4 hours lab. Prerequisite: TAU 100.

208-3 **Automotive Brake Systems**
Theory and laboratory work on the operation and service procedures of automotive drum and disc brake systems. Complete overhaul of the hydraulic system and use of the brake lathe are also studied. 1 hour lecture, 4 hours lab. Prerequisite: TAU 100.

220-3 **Air Conditioning**
Principles of automotive and truck air conditioners including heat transfer, change of state, cooling thermostat control, and pressure-temperature relationships. Other areas studied are testing, diagnosis, repair, servicing, and proper operation of hydraulic systems. 1 hour lecture, 4 hours lab. Prerequisite: TAU 112, TEG 209.

230-4 **Diesel Training**
Designed to train graduates as diesel mechanics to work on the basic components of the car. 2 hours lecture, 4 hours lab. Prerequisite: TAU 113.

240-3 **Parts Managers’ Course**
Covers all phases of parts inventory, numbering, and computer functions of a parts warehouse. 1 hour lecture, 4 hours lab.

241-3 **Service Management**
Covers the role of the service manager in the automobile dealership. Emphasis on management systems and controls, warranty claim service, time standards, record keeping, and customer relations.

250-4 **Testing and Repairs**
Oscilloscope theory and scope engine diagnosis; distributor testing machine operation and generator bench operations; engine troubleshooting theory and practice. 2 hours lecture, 4 hours lab. Basic hand tools and permission of instructor required.

251-4 **Engine Rebuilding**
Covers all phases of engine rebuilding. Students tear down and rebuild engines in the lab using cylinder boring and cylinder head service equipment. Engines are test run after rebuilding. Basic hand tools and permission of instructor required. 2 hours lecture, 4 hours lab.

295-1 to 4 **Independent Study**
Directed study on selected topics. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

297-1 to 4 **Studies in Selected Topics**
Course of variable content dealing with problems, approaches, and topics in the field of automotive technology. May be taken as often as topics vary.

299-4 **Internship**
Practical automotive experience for a qualified student as a mechanic under the joint planning and coordination of faculty, student, and automotive representative.

**Technical Data Processing/TDP**

121-4, 122-4 **COBOL I, II**
Programming elements of COBOL language; techniques for debugging and interpreting computer output; linkage to subroutines and overlays; file-structure involving both sequential and random access; case studies with business applications. 3 hours lecture, 2 hours lab. Prerequisite: for 121, TAI 103 or permission of instructor; for 122, TDP 121.

130-4 **BASIC I**
Programming elements of BASIC language; techniques for debugging and interpreting computer output; linkage to subroutines and overlays; file-structure involving sequential access; case studies with business applications. 3 hours lecture, 2 hours lab. Prerequisite: TAI 103 or permission of instructor.

145-4 **Computer Systems Application Programming**
Introduction to the concept of application programming techniques utilizing a disc operating system and interactive terminals. BASIC +2 is the implementation language. Topics include disc file structures, virtual arrays, chaining techniques, and subprograms. Programming exercises are assigned to develop methodology for utilizing integrated data files. 3 hours lecture, 2 hours lab. Prerequisite: TDP 130 or permission of instructor.
Courses/Technical Data Processing

221-4 Systems Analysis I
Introduction to fundamental concepts of systems development and design. Topics include basic system concepts, planning, elements of systems, performing systems study, and alternatives in systems design. 3 hours lecture, 2 hours lab. Prerequisite: TDP 122 or equivalent.

222-4 Systems Analysis II
Student must design and implement an information system from a managerial perspective. This includes analysis of present information flow, systems specifications, equipment selection, and system effectiveness. 3 hours lecture, 2 hours lab. Prerequisite: TDP 221 or equivalent.

230-5 Introduction to Operating Systems
Introduction to the concepts of computer operating systems and resource allocation. Topics include executive options, layered products, multiprocessing and multiprogramming options, utility functions, and memory management. Laboratory assignments consist of generating and tailoring a usable operating system with layered products. 3 hours lecture, 4 hours lab. Prerequisite: TDP 222 or equivalent.

241-4, 242-4 Introduction to Programming with PASCAL
Introduction to use of computers as problem-solving tools. Examples from and applications to broad range of problems. PASCAL is the current implementation language used. 3 hours lecture, 2 hours lab. Prerequisite: TDP 222 or equivalent.

245-4 Computer Programming with FORTRAN
Study of FORTRAN and its use as a problem-solving tool in a variety of computer programming applications. 3 hours lecture, 2 hours lab. Prerequisite: TDP 121 or 130 or 241 or permission of instructor.

252-4 Introduction to Assembly Language
Computer and program structure, machine and assembly language. Analysis of numerical and nonnumerical problems. 3 hours lecture, 2 hours lab. Prerequisite: TDP 121, 122, or TDP 241, 242; or equivalent; or permission of instructor.

261-4 Fundamentals of RPG Programming I
Designed to acquaint students with an extensively used computer programming language for small- and medium-sized computer systems. Emphasis placed on report preparation and file organization. 3 hours lecture, 2 hours lab. Prerequisite: TDP 121.

262-4 Fundamentals of RPG Programming II
Designed to give student specific competency in using advanced programming techniques in RPG programming language. Emphasis placed on table lookup procedures and file handling techniques. 3 hours lecture, 2 hours lab. Prerequisite: TDP 261.

270-5 Current Applications in Data Processing
Introduction to the latest developments in the electronic data processing field. Topics include techniques of data management, data base design, communications controls, and disc operating systems. 4 hours lecture, 2 hours lab. Prerequisite: TDP 222.

295-1 to 3 Independent Study
Directed study on selected topics. May be taken for letter grade or pass/unsatisfactory. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

297-1 to 4 Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of data processing. May be taken for letter grade or pass/unsatisfactory. May be repeated with different titles.

299-4 Internship
Practical data processing experience for qualified students under joint planning and coordination of faculty, student, and business representative. May be taken for letter grade or pass/unsatisfactory.

Technical English/TEN

101-2 Reading Improvement
Intensive individual work in reading skills, specifically vocabulary development and reading comprehension. May be taken for letter grade or pass/unsatisfactory.

105-4 Basic Writing
(Listed jointly with Developmental Education; see SS 089.) Helps students develop and improve writing skills. Subject areas include grammar, sentence structure, and paragraph development. Cannot be applied toward graduation.

110-3 Service Communications
Focus on customer-service related communication, both oral and written. Special attention to descriptive, service-related writing: preparing invoices, statements, receipts; process description, work orders; explanatory/direction-giving communication skills. Letters of application, personal data sheets. Prerequisite: TEN 105 or equivalent.
115-3 Secretarial Business Writing
Study of terminology and formats used in business communication: letters, reports, memos, dictation, refining the fundamentals of grammar, sentence construction, punctuation rules, spelling. Prerequisite: ENG 111.

116-4 Business Writings
Techniques in business writing with special attention given to improving mechanical skills, reviewing forms of business writing, and analyzing business and technical prose. Prerequisite: ENG 112.

117-3 Public Communications
Designed to help students learn to prepare print media, structure, and organize news stories, plan layouts, choose photographs for publication, and operate office and graphic equipment. Prerequisite: ENG 112.

118-4 Technical Writing
Writing for the technical/engineering world. Includes the writing of reports, instructions, and proposals. Provides an overview of letters and resumes. Prerequisite: ENG 111.

Technical Finance/TFI

205-3 Business Finance
Emphasis on financial structure of a monetary and credit system, monetary and credit policies, and the demands for funds in the business sector of the economy. Forms of business financing and fundamental concepts of capital budgeting are analyzed. Prerequisite: TAC 203.

221-3 Principles of Insurance
Twelve-topic course that explores the basic principles that underlie the entire field of insurance as well as the nature and operation of the insurance business.

222-3 Property Insurance
Thirteen-topic course that explores the insurance coverages, policy provisions, and concepts of property insurance in both personal and commercial lines. Prerequisite: TFI 221.

223-3 Casualty Insurance
Explores the coverages, policy, provisions, and concepts common to liability insurance policies, suretyships, liability insurance aspects of multi-line contracts, health and social insurance coverages. Prerequisite: TFI 221.

231-3 Real Estate Principles and Practices
Basic orientation to the broad field of real estate. Principles, practices, and issues of real estate. The real estate market, types of real property interest, contracts, deeds, financing, home ownership, leases, investment, management, purchasing, selling, role of real estate agent, search, examination, registration of title, title closing, the valuation process, city planning, zoning, public housing, urban renewal, and state regulation. Major issues and trends involving economic, political, and social implications in the field of real estate.

232-3 Real Estate Law
Includes all areas of law commonly concerned with the typical real estate practitioner and investor-consumer. Topics include: the law of agency as applied to real estate brokers and salespeople, law of fixtures, estates (including leases), conveyancing of real estate, real estate managers, zoning, cooperatives, condominiums, and license laws of Ohio. Prerequisite: TFI 231.

233-3 Real Estate Finance
Major instruments used in financing real estate. Mortgage types, terms, and provisions. Default and foreclosure. Land contracts, leases, sales, and leaseback arrangements. The mortgage market, determinants of supply and demand, and the effect of interest rate changes. Financial institutions, government operations. Alternative methods of financing income properties. Successful completion of this course meets part of the licensing requirements for real estate broker in Ohio. Prerequisite: TFI 231.

234-3 Real Estate Valuation and Appraisal
The purpose of appraisal and the concept of value. Factors influencing value. Determination of economic value through capitalization of future cash flows. Methodology for determining the capitalization rate, and use of compound interest tables. Market conditions. Replacement cost, depreciation, and land value. Successful completion of this course meets part of the licensing requirement for real estate broker in Ohio. Prerequisite: TFI 231.

235-3 Real Estate Brokerage
Real estate practices and management of property from the brokerage office manager's perspective. Managerial, financial, marketing, and legal aspects of real estate brokerage covered in depth. Prerequisite: TFI 231, 232.

236-3 Seminar in Selected Real Estate Topics
Various topics to be covered depending upon demand and instructor's objectives. Prerequisite: TFI 233, 234, or equivalent; or permission of instructor.

240-3 Money and Banking
Analysis of behavior and significance of money, credit, debt, and the banking system.
295-1 to 3 Independent Study
Directed study of selected topics. May be taken for letter grade or pass/unsatisfactory. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

297-1 to 5 Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of finance. May be taken as often as topics vary.

299-4 Internship
Practical business experience in finance for a qualified student under the planning and coordination of faculty, student, and business representative. Completion of sixty credit hours required.

Technical Management/TMG

201-3 Fundamentals of Management
Basic fundamentals of the process of management applied to business organizations. Emphasis is placed on the practical applications of techniques employed by managers at lower and middle organizational levels. Prerequisite: ADM 101.

202-3 Labor Relations
Consideration of the practices, principles, and organization of collective bargaining. Study of the techniques of mediation and the agencies involved in mediation. Causes and cures of labor disputes. Prerequisite: TMG 201 or 210.

210-3 Personnel Management
Study of the characteristics, purposes, objectives, and techniques of supervision and coordination of the work of others. Discussions include employment interviewing, training procedures, supervision and improvement of human relations. Prerequisite: TMG 201.

240-3 Wage and Salary Administration
Analysis of job evaluation for salary and hourly positions, job designs, compensation structures, and fringe benefit and retirement fund administration. Prerequisite: TMG 201 or 210.

245-3 Industrial Relations
Examine manufacturing staffing policies, reviewing job information developments and job analysis processes, evaluating recruitment programs, developing selection, interviewing, and testing techniques, establishing personnel policies, and evaluating EEO program requirements. Prerequisite: TMG 201 or 210.

250-3 Purchasing
Composition of a purchasing office, buying the right quality from the right vendor, buying to support inventory control, "make versus buy" philosophy, and some legal aspects of buying. Prerequisite: TMG 201 or TMK 202.

270-3 Production Management
Introduction to the functions making up the production system, including product parts manufacture, process routing, quality standards, work measurement, work methods, scheduling, and inventory control. Prerequisite: TMG 201.

280-3 Small Business Management
Stresses business management functions important to small businesses, including single ownership, partnership, and incorporation, capitalization and financing requirements, legal requirements, production and marketing arrangement. Prerequisite: TMG 201 or 210.

290-4 Comprehensive Management
Final course designed to integrate the student's two-year program into a cohesive program and to promote management problem-solving capabilities. Prerequisite: TMG 202, TMK 202, or permission of instructor.

295-1 to 3 Independent Study
Directed studies on selected topics. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

297-1 to 5 Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of management. May be taken for letter grade or pass/unsatisfactory. May be repeated with different titles.

299-4 Internship
Practical business experience in management for a qualified student under the joint planning and coordination of faculty, student, and business representative.

Technical Marketing/TMK

201-3 Basic Marketing I
Study of the functions of marketing in the American business system with emphasis on economic and social determinants. Prerequisite: EC 201; TMT 110, 111.

202-3 Basic Marketing II
Practical evaluation of marketing functions relative to product development, promotion, pricing, distribution, and establishing market objectives. Prerequisite: TMK 201.

210-3 Promotion
Use of personal selling, sales promotion, and advertising techniques. Prerequisite: TMK 201.

220-3 Retailing
Study of the marketing functions at the retail level. Emphasis on institutional practices at various types of retail establishments. Prerequisite: TMG 201; TMT 110, 111.
228-3 Retail Management
Concentrates on merchandise management and retail control. Includes application of buying procedures and analysis of current merchandising policies. Prerequisite: TMK 202, 220.

230-3 Physical Distribution
Study of the physical transportation facilities and alternative channels of distribution. Prerequisite: TMK 201.

240-3 Salesmanship and Sales Supervision
Analysis of personal skills essential to successful selling. The personal characteristics and merchandising knowledge necessary for customer development are discussed. Mass and personalized methods of sales supervision are considered. Prerequisite: TMK 201 or permission of instructor.

260-3 Marketing Research
Study and performance of real or simulated marketing research problems with special emphasis on practical applications. Permission of instructor required.

290-4 Comprehensive Marketing
Final course designed to integrate the student’s two-year program into a cohesive marketing program and to promote marketing problem-solving capabilities. Prerequisite: TMK 202, TMG 202 or 210; or permission of instructor.

295-1 to 3 Independent Study
Directed studies on selected topics. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

297-1 to 5 Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of marketing. May be taken for letter grade or pass/unsatisfactory. May be repeated with different titles.

299-4 Internship
Practical business experience in retail marketing for a qualified student under the joint planning and coordination of faculty, student, and business representative.

Technological Mathematics/TMT

102-3 Basic Technical Mathematics
Sets, counting numbers, integers, rational numbers, equations in two variables, polynomials, factoring, fractional and quadratic equations. Math placement test required for enrollment.

110-3, 111-3 Managerial Mathematics I, II
Basic theory of mathematics needed to understand problems in commercial mathematics. Rapid calculation methods and work-saving devices for computing installment payments, simple and compound interest, annuities, depreciation, and investment. Development and use of graphs. Prerequisite: for 110, MTH 102 or equivalent; for 111, TMT 110.

113-4 Technical Mathematics I
Course includes an introduction to the trigonometric relations, vectors, graphs of trigonometric functions, exponents, radicals and determinates.

114-4 Technical Mathematics II
Course includes work with analytic geometry, logarithmic functions, solving equations, some theory of equations, inequalities, properties of the trigonometric function, inverse trigonometric functions. Prerequisite: TMT 113.

115-4 Technical Mathematics III
Topics covered are variations, progressions, properties of the trigonometric functions, inverse trigonometric functions, analytical geometry. Prerequisite: TMT 114.

116-4 Technical Mathematics IV
Introduces topics of calculus such as derivative and applications, integration and applications, differentiation of transcendental functions, methods of integration, and expansion of functions in series. Prerequisite: TMT 115.

138-4 Applied Technical Mathematics
An introduction to the techniques and fundamentals of calculus. Study of limits, the derivative, the definite integral, infinite series, and differential equations, with emphasis on applications. Prerequisite: TMT 116.

Technical Office Administration/TOA

201-4 Beginning Shorthand
Development of a vocabulary in either Gregg Diamond Jubilee or Century 21 series shorthand.

202-4 Intermediate Shorthand
Continued vocabulary development in shorthand. Emphasis on dictation and ability to transcribe accurately. Prerequisite: TOA 201 or one year of high school instruction in shorthand; TOA 211 or equivalent.

203-4 Advanced Shorthand
Emphasis on dictation and speed building in shorthand. Introduction to transcription. Prerequisite: TOA 202 or two years of high school instruction in shorthand.
211-3 Beginning Typewriting
Mastery of basic skills in touch typewriting. Typing of letters, reports, tabulations, themes. Open to any student with less than one year of high school instruction in typewriting or equivalent.

212-3 Intermediate Typewriting
Development of speed and accuracy; introduction to production typewriting of letters, reports, tabulations, and manuscripts. Prerequisite: TOA 211 or one year of high school instruction in typewriting.

213-3 Advanced Typewriting
Further development of speed and accuracy; emphasis on letters, reports, forms, tabulation problems, and manuscripts in executive, medical, or legal specialized area. Prerequisite: TOA 212.

221-3 Secretarial Procedures I
Final course integrating the development of operational functions and decision-making competencies. Simulations in executive, medical, and legal procedures including experiences in telephone and communication techniques, word processing, and administrative services.

222-3 Secretarial Procedures II
Continuation of TOA 221.

230-3 Records Management
College-level course in filing systems and procedures. Combines technical aspects of records technique with sound principles of management.

231-3 Office Management
Office organization; emphasis on work flow, proper equipment, problems in supervision, human relations, and management techniques.

232-4 Word Processing
Introductory course in automated word processing equipment and systems. Prerequisite: TOA 212 or permission of instructor.

233-3 Machine Transcription
Executive, medical, or legal transcription from belts, tapes, and cassettes, emphasizing skills needed in today's word processing environment. Prerequisite: TOA 213, 232, or permission of instructor.

235-3 Office Machines I
Operation of electronic printing and electronic display calculators.

237-3 Office Machines II
Introduction to duplicating equipment and processes: copier, spirit, mimeograph, and offset.

240-3 Data Entry
Acquaints students with the technical data and machines used in entering data in a form that can be used by data processing equipment in typical office situations. Prerequisite: TOA 213 or permission of instructor.

250-4 Executive Transcription and Terminology
Introduction to typewritten transcription from shorthand dictation of executive material. Prerequisite: TOA 203, 212.

251-4 Legal Terminology and Transcription
Introduction to typewritten transcription from shorthand dictation of legal materials. Prerequisite: TOA 203, 212.

252-4 Medical Terminology and Transcription
Introduction to typewritten transcription from shorthand dictation of medical materials. Prerequisite: TOA 203, 212.

295-1 to 3 Independent Study
Directed studies in selected topics. May be repeated to a maximum of four credit hours. Sophomore standing and permission of instructor required.

297-1 to 5 Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of office administration. May be taken for letter grade or pass/unsatisfactory. May be repeated with different titles.

299-4 Internship
Practical business experience for a student as a secretary under the joint planning and coordination of faculty, student, and business representative. May be taken for letter grade or pass/unsatisfactory.

Technical Physics/TPH

111-4 Mechanics
The principles of physics taught with emphasis on technical applications, including fundamental phenomena and laws of physics. Newton's laws, forces, torques, equilibrium, motion, work, energy. 3 hours lecture, 2 hours lab. Prerequisite: TMT 113.

112-4 Heat, Light, and Sound
Temperature and effects of heat, heat and change of state, heat transfer; simple harmonic motion, sound waves; nature of light and illumination, reflection, refraction, dispersion, and optical instruments. 3 hours lecture, 2 hours lab. Prerequisite: TPH 111.
Technical Psychology/TPS
200-2 to 4 Psychological Study of Contemporary Problems/Research
Restricted psychological problem areas and their implications for modern society and modern intellectual thought. Topics vary from quarter to quarter. May be repeated.

204-3 Industrial and Organizational Psychology
Scientific psychological principles, procedures, and methods applied to human behavior in industrial organizations. Prerequisite: PSY 111 or 112 or permission of instructor.

Technical Quantitative Business Analysis/TQB
210-3, 211-3 Introduction to Statistics I, II
Principles and techniques of collecting, analyzing, presenting, and interpreting quantitative data in business and economics. Emphasis on computer usage.

Technical Sociology/TSO
110-3 Basic Interpersonal Relations
Human relations skills in and out of the working environment. Included is a study of customer relations, employee interpersonal relations, tensions, and other job conflicts.

199-1 to 4 Workshop in Current Problems
Intensive study of a particular problem area, utilizing professionally qualified personnel from the academic and community environments. Specific topics to be added with individual workshops. May be taken for letter grade or pass/unsatisfactory. May be repeated to a maximum of eight credit hours with different titles.

Technical Study Skills/TSS
100-2 Study Strategies for College
Offers advice and practice in study-related areas such as note-taking, time management, preparing for exams, textbook skills, memory training, and so forth. Graded pass/unsatisfactory. Cannot be applied toward degree.

101-3 Water Well Drilling I
Introduction to the operation of a rotary drilling machine with emphasis on job safety. Includes the actual construction of water wells in unconsolidated materials. 1 hour lecture, 4 hours lab.

102-3 Water Well Drilling II
Continued instruction in operation of a rotary drilling machine with emphasis on job safety, proper use of drilling fluids, auger drilling, and the mechanics of pneumatic and hydraulic systems on the rig. 1 hour lecture, 4 hours lab. Prerequisite: TWW 101.

103-3 Water Well Drilling III
Continued instruction in operation of a rotary drilling machine with emphasis on job safety, auger drilling, proper use of drilling fluids, and rig maintenance. 1 hour lecture, 4 hours lab. Prerequisite: TWW 102.

105-3 Introduction to Groundwater I
Introduction to the occurrence, movement, and quality of groundwater in the saturated zone. Examines basic physical laws which affect groundwater.

106-3 Introduction to Groundwater II
Further examination of movement and quality of groundwater. Aquifer evaluation by test pumping, groundwater exploration methods, and movement of groundwater pollution. Prerequisite: TWW 105.

107-3 Water Well Design I
An examination of factors, both subsurface environmental and fabricated material related, which dictate the structural design of water wells. Analysis of aquifer materials, well development, and screen sizing are stressed. 1 hour lecture, 4 hours lab.

108-3 Water Well Design II
An examination of design criteria and installation methods for large diameter and special purpose water wells. Prerequisite: TWW 107.

201-3 Water Systems Planning I
The elements of proper design, selection, and installation of water delivery systems. Pump selection/installation, water control, piping systems, hydro pneumatic tank selection, installation of water conditioning, contaminant removal, and disinfection systems are examined.
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202-3 Water Systems Planning II
High capacity pumping system planning and installation methods are examined in component order. Vertical lineshaft turbine and high capacity submersible pumps are considered exclusively in this course. Prerequisite: TWW 201.

210-3 Water Well System Installation
Selecting and installing actual water well delivery systems for given sites and conditions. System components are examined according to their function in the system. 1 hour lecture, 4 hours lab. Prerequisite: TWW 201.

211-3 Water Well Maintenance
Survey of the mechanisms which cause structural deterioration in water wells and pumping systems as well as maintenance procedures used to correct the problems.

212-3 Thermoplastic Pipe Fabrication
Fabrication of thermoplastic pipe for use in water well application. Selection, solvent cementing, and installation of thermoplastic pipe are stressed.

297-1 to 3 Studies in Selected Topics
Course of variable content dealing with problems, approaches, and topics in the field of water well technology. May be taken for letter grade or pass/unsatisfactory. May be repeated with different titles.

299-1 to 5 Water Well Technology Internship
Practical training in all phases of water well construction for a qualified student under the joint planning of faculty, student, and active water well contracting firms. Completion of sixty credit hours of course work required.
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Faculty


Adams, Robert W.  Associate Professor of Political Science  A.B., 1955, Utica College; M.A., 1961, Syracuse University; Ph.D., 1969, The Ohio State University

Ahmad, Khurshid  Associate Professor of Insurance and Real Estate  B.A., 1953, University of Karachi (Pakistan); M.A., 1955, Punjab University (India); Ph.D., 1970, University of Pennsylvania

Albanese, Catherine L.  Professor of Religion  A.B., 1962, Chestnut Hill College; M.A., 1968, Duquesne University; M.A., 1970, Ph.D., 1972, University of Chicago Divinity School

Allen, Arnold  Professor of Marketing and Department Chair  B.S., 1940, M.A., 1943, University of Cincinnati; certified in psychoanalysis, 1962, Chicago Institute for Psychoanalysis

Alter, Gerald M.  Associate Professor of Biological Chemistry  B.A., 1968, Albion College; Ph.D., 1975, Washington State University

Amon, James P.  Associate Professor of Biological Sciences  B.S., 1965, University of Cincinnati; M.A., 1968, Ph.D., 1974, College of William and Mary

Amos, Oris E.  Professor of Education: Coordinator, Special Education  A.B., 1951, Virginia State College; M.A., 1963, Ph.D., 1971, The Ohio State University

Anderson, Beverlee B.  Associate Professor of Marketing and Department Chair  B.S., 1960, North Carolina State University; M.B.A., 1966, M.B.A., 1969, Ph.D. 1972, The Ohio State University

Anderson, Claudia  Assistant Professor of Theatre Arts  B.M., 1974, Miami University; M.A., 1981, Bowling Green State University; M.F.A., 1984, University of South Carolina

Andrews, Merrill L.  Associate Professor of Physics and Department Chair  B.A., 1960, Cornell University; Ph.D., 1967, Massachusetts Institute of Technology

Anon, Norman  Professor of Economics  A.B., 1948, M.S., 1951, Ph.D., 1954, University of Wisconsin

Arasu, K.T.  Associate Professor of Mathematics  B.S., 1976, M.S., 1977, Panjab University (India); Ph.D., 1983, The Ohio State University

Arbagi, Martin  Associate Professor of History  A.B., 1961, Georgetown University; M.A., 1967, Ph.D., 1969, Rutgers University at New Brunswick

Arlian, Larry G.  Professor of Biological Sciences and Physiology  B.S., 1966, M.S., 1968, Colorado State University; Ph.D., 1972, The Ohio State University


Baker, William D.  Professor of English  B.A., 1946, Hobart College; M.A., 1948, University of Chicago; Ph.D., 1950, Northwestern University

Ballantine, Janet  Professor of Sociology  B.S., 1963, The Ohio State University; M.A., 1966, Columbia University; Ph.D., 1971, Indiana University

Bambakidis, Gust  Associate Professor of Physics  B.S., 1958, University of Akron; M.S., 1963, Ph.D., 1966, Case Western Reserve University

Barbour, Clyde D.  Associate Professor of Biological Sciences  A.B., 1958, Stanford University; Ph.D., 1966, Tulane University of Louisiana


Barnes, H. Verdain  Professor of Medicine and Pediatrics: Department Chair, Medicine  B.A., 1958, McMurry College; B.D., 1961, Yale University; M.D., 1965, Vanderbilt University School of Medicine

Barr, David L.  Associate Professor of Religion and Department Chair  B.A., 1965, Fort Wayne Bible College; M.A., 1969, Ph.D., 1974, Florida State University

Barr, Steven A.  Voluntary Assistant Professor of Physiology  B.S., 1968, The Ohio State University; M.S., 1972, Wright State University; Ph.D., 1980, The Ohio State University

Barten, John C.  Adjunct Associate Professor of Education: Dean, College of Continuing and Community Education  B.S., 1957, M.A., 1960, Ph.D., 1971, The Ohio State University

Basset, Abe J.  Professor of Theatre Arts and Department Chair  B.A., 1952, Bowling Green State University; M.A., 1957, Ph.D., 1962, The Ohio State University

Batata, Ali  Professor of Pathology and Department Chair: Course Director, Pathology, Director, Hematology Lab  B.B., B.Ch., 1950, D.M., 1960, D.M.S., 1960, Cairo University School of Medicine

Batra, Prem P.  Professor of Biological Chemistry  B.S., 1955, M.S., 1958, Punjab University (India); Ph.D., 1961, University of Arizona

Battino, Rubin  Professor of Chemistry  B.S., 1953, Community College of New York; M.A., 1954, Ph.D., 1957, Duke University

Becker, Carl  Professor of History  B.A., 1949, Otterbein College; M.A., 1950, University of Wisconsin; Ph.D., 1971, University of Cincinnati

Beelick, Donald J.  Assistant Professor of Philosophy  B.A., 1963, Western Michigan University; M.A., 1967, Ph.D., 1972, The Ohio State University

Bell, Nancy  Instructor in Mathematics and Statistics  B.S., 1964, Ohio University; M.S., 1980, Wright State University

Benner, Carl V.  Professor of Education  B.S., 1957, Rio Grande College; M.A., 1960, University of Northern Iowa; M.S., 1960, Purdue University; Ed.D., 1965, Bowling Green State University; Ph.D., 1970, The Ohio State University

Bergmann, Merrie  Assistant Professor of Computer Science  B.A., 1972, Rutgers University; M.A., 1973, Ph.D., 1976, University of Toronto (Canada)

Bernhardt, Gregory R.  Assistant Professor of Education  B.A., 1971, Colorado State University; M.S., 1973, Kansas State Teachers College; Ed.D., 1979, University of Northern Colorado

Berry, Charles R.  Professor of History  B.A., 1954, George Washington University; M.A., 1963, Ph.D., 1967, University of Texas at Austin

Bertoline, Gary R.  Instructor in Mechanical Drafting and Design Technology  B.S., 1984, Northern Michigan University; M.Ed., 1979, Miami University

Bethke, Richard J.  Associate Professor of Electrical Systems Engineering and Computer Engineering  B.S.M.E., 1965, Ph.D., 1970, University of Wisconsin

Bigley, Nancy J.  Professor of Microbiology and Immunology and Department Chair and Program Director  B.S., 1953, Pennsylvania State University; M.S., 1955, Ph.D., 1957, The Ohio State University
Glaser, Roger M. Professor of Physiology and Acting Chair and Program Director B.A., 1968, M.S., 1969, City University of New York Queens College, Ph.D., 1971, The Ohio State University

Gleason, James J. Associate Professor of English B.S., 1953, University of Dayton; M.A., 1957, Ph.D., 1969, The Ohio State University


Goldenberg, Robert A. Associate Professor of Otolaryngology and Department Chair B.A., 1963, Stanford University; M.D., 1968, University of Louisville; M.S., 1973, University of Illinois

Goldfinger, Melvyn D. Professor of Physiology B.A., 1969, Rutgers University; M.S., 1972, University of Maryland; Ph.D., 1978, State University of New York

Gordon, David C. Professor of History B.A., 1947, Princeton University; M.A., 1952, American University of Beirut (Lebanon); Ph.D., 1957, Princeton University

Gorowara, Krishan K. Professor of Mathematics and Computer Engineering B.S., 1951, University of Lucknow (India); M.A., 1952, Ph.D., 1956, University of Delhi (India)

Gottshall, Robert W. Associate Professor of Physiology B.S., 1967, Mount Union College; M.S., 1969, Ph.D., 1971, The Ohio State University

Goulet, Waldemar M. Professor of Finance, Executive Director, Organizational Services Group; Associate Dean, College of Business and Administration B.A., 1963, Wayne State University; M.B.A., 1966, University of Detroit; Ph.D., 1973, Michigan State University


Hannen, Russell A. Associate Professor of Electrical Systems Engineering B.S.M.E., 1953, University of Minnesota; M.S.E.E., 1957, Ph.D., 1960, The Ohio State University

Hansell, T. Stevenson Associate Professor of Education B.A., 1965, Dickinson College; M.Ed., 1970, University of Delaware; Ph.D., 1974, University of Virginia

Hanson, Harvey M. Professor of Physics B.S., 1952, Professor of Astronomy B.S., 1954, Ph.D., 1956, The Ohio State University

Harbage, Mary Professor of Accountancy B.S., 1955, M.A., 1967, Ph.D., 1969, University of Alabama

Hawley, John Assistant Professor of Computer Science and Mathematics WCBS, 1971, Defiance College; M.S., 1974, Wright State University

Hemmendinger, David Assistant Professor of Computer Science and Computer Engineering B.A., 1962, Harvard University; M.S., 1963, Stanford University; M.A., 1966, Ph.D., 1973, Yale University; M.S., 1982, Wright State University

Hess, George G. Associate Professor of Chemistry and Department Chair B.S., 1959, Juniata College; Ph.D., 1964, Pennsylvania State College

Hetherington, Robert A. Associate Professor of Theatre Arts B.A., 1974, College of Wooster; M.A., 1975, Northwestern University

Hobbs, Jon R. Assistant Professor of Management Science B.S., 1959, University of Wisconsin; M.S., 1963, Air Force Institute of Technology, Ph.D., 1972, Stanford University

Hoehn, Lilburn Professor of Education B.S., 1954, M.Ed., 1963, University of Missouri; Ph.D., 1967, Michigan State University

Holdcraft, Carol A. Instructor in Nursing B.S.N., 1971, M.S.N., 1973, University of Cincinnati


Hosford, Jon R. Assistant Professor of Philosophy and Department Chair B.S., 1961, University of Dayton; M.A., 1962, Miami University; Ph.D., 1970, The Ohio State University

Howard, Lillie P. Associate Professor of English; Associate Dean, College of Liberal Arts B.A., 1971, University of South Alabama; M.A., 1972, Ph.D., 1975, University of New Mexico
Huberman, Jeffrey  Associate Professor of Theatre Arts  B.A., 1969, University of Pittsburgh; M.A., 1971, Ph.D., 1979, Indiana University

Hubschman, Jerry H.  Professor of Biological Sciences  A.A.S., 1956, State University of New York; B.S., 1959, Ph.D., 1962, The Ohio State University

Hughes, James M.  Professor of English; Director, Graduate Studies in English  B.A., 1961, Harvard University; M.A., 1962, Ph.D., 1969, University of Pennsylvania

Hull, Barbara  Assistant Professor of Biological Sciences  A.B., 1971, Smith College; Ph.D., 1976, University of Colorado

Hussman, Lawrence E.  Professor of English and Department Chair  B.A., 1964, University of Dayton; M.A., 1957, Ed.D., 1964, University of Michigan

Hutchings, Brian L.  Professor of Biological Sciences  B.S., 1938, Brigham Young University; M.S., 1940, Ph.D., 1942, University of Wisconsin

Hutzel, Willard J.  Associate Professor of Political Science; Executive Vice-Provost for Planning and Budgeting  B.A., 1959, Bowling Green State University; Ph.D., 1966, University of Maryland

Hye, Allen E.  Associate Professor of German  B.A., 1966, Franklin and Marshall College; M.A., 1967, Middlebury College; Ph.D., 1972, University of Connecticut

Iddings, Roger G.  Professor of Education; Dean, College of Education and Human Services; Acting Director, Division of Library and Communication Sciences, College of Education and Human Services  A.B., 1952, Hanover College; M.Ed., 1960, Wayne State University; Ph.D., 1966, The Ohio State University

Inanli, Harun  Instructor in Computer Science and Computer Engineering  B.S.E.E., 1978, Turkish Air Force Academy (Turkey); M.S.E.E., 1983, Air Force Institute of Technology

Irving, William B.  Assistant Professor of Philosophy  B.A., 1973, University of Michigan; M.A., 1976, Ph.D., 1980, University of California at Los Angeles

Isaacs, Larry D.  Associate Professor of Health, Physical Education, and Recreation  B.S., 1972, M.S., 1976, Virginia Commonwealth University; Ph.D., 1979, University of Maryland

Isham, A.K.M. Aminul  Professor of Anthropology  B.A., 1952, M.A., 1954, University of Dacca (Pakistan); M.A., 1961, University of London (England); M.A., 1964, University of Toronto (Canada); Ph.D., 1969, McGill University

Jacob, James E.  Associate Professor of Political Science  A.B., 1972, University of California at Berkeley; M.A., 1975, Ph.D., 1979, Cornell University

Jankowski, Francis J.  Professor Emeritus of Mechanical Systems Engineering  B.S.C.E., 1943, Union College; M.S., 1947, Sc.D., 1949, University of Cincinnati

Janssen, Nancy P.  Assistant Professor of Nursing; Director, Continuing Education  B.S.N., 1975, Wright State University; M.S., 1976, The Ohio State University

Jarrell, Howard R.  Assistant Professor of Library Administration; Senior Reference Librarian, University Libray  B.S., 1955, University of Dayton; M.S.L.S., 1958, Case Western Reserve University

Jaworowski, A. Edward  Associate Professor of Physics  M.Sc., 1966, Ph.D., 1974, University of Warsaw (Poland)

Jeffers, Joe A.  Instructor in Computer Science and Computer Engineering  B.S.M.E., 1956, University of Michigan; M.S.M.E., 1963, Texas A&M University

Jenkins, Alyce  Assistant Professor of Education  B.S., 1957, Alabama Agricultural and Mechanical University; M.Ed., 1968, Kent State University

Johns, F. Edwin  Instructor in Library Administration, Bibliographic Services and Acquisitions, University Library  B.S., 1962, Virginia Commonwealth University; M.L.S., 1970, George Peabody College

Johnson, Melvin A., Jr.  Professor of Physiology  B.S., 1950, Central State University; M.S., 1955, Miami University; Ph.D., 1969, Jefferson Medical College

Johnson, Sarah  Associate Professor of Music and Department Chair; Coordinator, Community Music B.Mus., 1966, Michigan State University; M.A., 1970, Kent State University

Jones, Barbara  Assistant Professor of Nursing  B.S.N., 1976, Purdue University; M.S.N., 1980, University of Cincinnati

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Joseph Castellano 1978-79
Jacob Dorn 1977-78
Glenn Graham 1976-77
Barbara Dreher 1975-76
John Treacy 1974-75
Ira Fritz 1972-74
Lawrence Hussman 1971-72
Emil Knetelc 1968-71

Presiding Officers of Faculty Meetings
Norman Anon 1967-68
Edward Cox 1966-67

Chairman of Academic Council
Nicholas Piediscalzi 1966-67

Administrative Officers

Atwater, David S. Assistant Vice-President, Facilities and General Services B.A., 1965, Denison University, M.A., 1960, Case Western Reserve University

Barton, John C. Dean, College of Continuing and Community Education B.S., 1957, M.A., 1960, Ph.D., 1971, The Ohio State University

Bell, R. Donald Director, Materials Management and Telephone Services B.B.A., 1955, University of Cincinnati; M.B.A., 1970, Wright State University

Borum, Regina A. Director, University and Community Events

Brandeberry, James E. Acting Director, School of Engineering; Acting Associate Dean, College of Science and Engineering B.S.E.E., 1961, M.S.E.E., 1963, University of Toledo; Ph.D., 1969, Marquette University

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Cooper, Alan Director, Center for Corporate Concern; Executive-in-Residence B.S., B.A., 1953, M.B.A., 1960, Xavier University

Corbo, Nicholas J. University Engineer B.S.M.E., 1966, Newark College of Engineering

Crawford, James Director, Graduate Programs in Business and Economics B.S., 1970, M.S., 1971, Wright State University; M.S., 1976, University of Dayton

Cusack, Michael J. Director, Athletics B.S., 1964, Long Island University; M.S., 1969, City University of New York Queens College, Ed.D., 1980, New York University

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Darr, David Director, Financial Aid B.A., 1967, Mount Union College; M.B.A., 1975, Baldwin-Wallace College

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Dobson, Frank E. Director, Bolinga Black Cultural Resources Center B.A., 1973, State University of New York at Buffalo; M.A., 1975, University of Nevada at Las Vegas


Dorn, Jacob H. Director, University Honors Program B.A., 1960, Wheaton College; M.A., 1962, Ph.D., 1965, University of Oregon

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Hagan, Jarrell R. Director, Safety B.S., 1965, University of Wyoming; M.S., 1972, University of Arkansas.

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Hesse, Elmer F. Director, Administrative Computer Center B.S., 1972, M.S., 1976, Ball State University.

Hutzel, Willard J. Executive Vice- Provost for Planning and Budgeting B.A., 1959, Bowling Green State University, Ph.D., 1966, University of Maryland.

Iddings, Roger G. Dean, College of Education and Human Services A.B., 1952, Hanover College; M.Ed., 1960, Wayne State University; Ph.D., 1966, The Ohio State University.

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Karns, David A. Director, Center for Research Development, Director, Consumer and Business Research Center A.B., 1963, Ph.D., 1974, University of Michigan.


Kedzi, Paul Director, Cox Heart Institute, School of Medicine B.A., 1934, M.D., 1942, Pazmany Peter University (Hungary).

Kidder, Audrey J. Health Sciences Librarian B.A., 1972, California State University at Los Angeles; M.L.S., M.P.A., 1974, University of Southern California.

Kinney, Larry Director, University Communications B.S., 1963, Ohio University.

Klarquist, Rita M. Director, Financial Services B.A., 1950, College of Saint Francis; M.B.A., 1975, Wright State University.

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Kotecha, Kanti C. Director, Legal Affairs and Court of Claims Coordinator Barrister at Law, 1960, Middle Temple (England); M.A., 1965, Ph.D., 1970, Tufts University.

Kretzer, Robert L. Director, Parking Services B.A., 1970, Wright State University.

Lancaster, B. Jeanette Dean, School of Nursing B.S.N., 1966, University of Tennessee; M.S., 1969, Case Western Reserve University; Ph.D., 1977, University of Oklahoma.

Lee, John A. Director, Center for Small Business Assistance B.S., 1976, M.B.A., 1978, Wright State University; CPA.


Lewis, William D. Director, Telecommunications and University Media Production Services B.S., 1956, Michigan State University.

Macklin, Mary Ann Director, University Policy Coordination A.B., 1960, Ohio Dominican College; M.A., 1965, University of Dayton.

Malicki, Gerald C. Director, Admissions and Records, School of Graduate Studies B.S., 1955, University of Tulsa; M.B.A., 1967, Indiana University; M.Ed., 1974, University of Massachusetts.


Moore, Perry D. Dean, College of Liberal Arts B.A., 1968, M.A., 1970, Midwestern University; Ph.D., 1974, University of Texas at Austin.

Mulhollan, Paige E. President B.B.A., 1956, M.A., 1962, University of Arkansas; Ph.D., 1966, University of Texas at Austin.

Neiman, Judith Executive Director, Personnel Administration B.S., 1948, The Ohio State University; M.S., 1971, Wright State University.

O'Brien, M. Patricia Executive Assistant to the President, Executive Director, Presidents Club; Secretary to the Board of Trustees, Assistant Vice-President for Public Relations B.A., 1977, Union of Experimenting Colleges-Universities (Antioch).

Osborne, Verniece E. Director, University Audio-Visual Services.

Peterson, Wayne L. Director, Student Information Systems: Coordinator, University Testing Services B.S., 1957, Wisconsin State University.

Petrosky, Jerrold S. Executive Director, National Center for Rehabilitation Engineering A.B., 1970, Washington University; Ph.D., 1974, Saint Louis University School of Medicine; B.S.E., 1982, Wright State University.

Premus, Robert Director, Center for Industrial Studies B.S., 1962, Bob Jones University; M.A., 1967, Ohio University; Ph.D., 1974, Lehigh University.

Rambo, Steve Director, Computer Services A.B., 1975, Georgetown College; M.B.A., 1982, Wright State University.

Risacher, Joanna Director, Student Development: Assistant Vice-President for Student Life B.A., 1964, Saint Mary-of-the-Woods College; M.S., 1966, Indiana University.


Sawyer, William D. Dean, School of Medicine M.D., 1954, Washington University.

Schaefer, Donald J. Director, Academic Research and Instruction Computation Center; Associate Director, Computer Services A.B., 1957, San Jose State University; M.A., 1958, Ph.D., 1963, The Ohio State University.

Shearer, Anne B. Director, Developmental Education B.A., 1956, Howard University; M.A., 1964, Atlanta University; Ph.D., 1970, Ohio University.

Simon, Stephen H. Director, Handicapped Student Services B.S., 1969, Le Moyne College; M.S., 1971, Syracuse University.


Smith, Carolyn B. Director, Cooperative Education B.A., 1969, Antioch College; M.S., 1971, University of Wisconsin.


Spanier, Edward J. Assistant Vice-President for Financial Services, Treasurer B.A., 1959, La Salle College; Ph.D., 1964, University of Pennsylvania.

Stuhlman, Robert A. Director, Laboratory Animal Resources; Director, Interdisciplinary Teaching Laboratories, School of Medicine; D.V.M., 1963, Doctor of Veterinary Medicine; M.S., 1971, University of Missouri.
Thomas, Donald C. Dean, School of Graduate Studies and Vice-Provost for Research B.S., 1957, Xavier University, M.S., 1959, University of Cincinnati, Ph.D., 1968, Saint Louis University.


Tiernan, Thomas O. Director, Brehm Laboratory B.S., 1958, University of Windsor (Canada), M.S., 1960, Ph.D., 1966, Carnegie-Mellon University.

Treiber, Jane E. Director, Communications and Events School of Medicine B.A., 1976, The Ohio State University.

Verdon, Walter A. Director, Center for Economic Education, Director, Center for Professional Development B.A., 1960, Luther College, M.A., 1967, Ph.D., 1974, University of Nebraska at Lincoln.


Wehrle-Einhorn, Juanita Director, Affirmative Action Programs B.A., 1967, Youngstown University, M.A., 1972, University of Maryland, Ph.D., 1980, University of Kansas.
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Notice to Students

The Family Education Rights and Privacy Act of 1974 (Public Law 93-330)

The following notice is published as a public service for the student body. Federal regulations require annual notice to students on this subject.

Wright State University has for many years regulated access to student records. Federal regulations now apply in this area and are designed to protect the privacy of student records. The statute and regulations govern access to records, their release, and the rights of students to review and, if necessary, challenge information they believe to be inaccurate.

This notice, to be published annually, is a digest of these regulations. The full text is available for student examination in the Office of Student Development, the Office of the Registrar, the Affirmative Action Programs Office, and in most college offices. A more detailed digest of the act may also be found in the Student Handbook.

Under the act, "education records" means, with certain exceptions as listed below, those records, files, documents, or other materials related directly to a student and maintained by any unit of the university. The following categories of information are exempt and are not considered to be "education records": (a) records made by university personnel which are in the sole possession of the maker and are not revealed to any other person; (b) records maintained by campus security; and (c) medical and counseling records used solely for treatment. (Records pertaining to students, which are maintained by university offices, are official records, and as such, remain the property of Wright State University.)

Students may seek access to their records by submitting a written and dated request on forms provided by each office from which information is sought. The head of that unit will make the records available within forty-five days and give students the right to challenge any material contained therein on the basis of it being inaccurate, misleading, or inappropriate. The right to challenge grades does not apply under the act unless the grade was inaccurately recorded. Exceptions to the right to review records by students are as follows: (a) financial records of parents; (b) confidential letters and statements of recommendation made prior to January 1, 1975, and any other recommendations for which the student has voluntarily waived the right to access.

Wright State University does not maintain education records in any one central office. Records are maintained generally in the respective colleges and schools, the Offices of the Registrar, Student Development, University Placement Services, Admissions, Financial Aid, University Division, Veterans Affairs, Bursar, Athletics, Student Health Services, and Handicapped Student Services.

Questions concerning the location of individual student records should be directed to the Office of Student Development or the registrar.

With specified exceptions, the university may release information in students' records to others if: (a) there is written consent from the student specifying the records to be released, the reasons for such release and to whom, and with a copy of the records provided to the student if desired by the student; or (b) such information is furnished to comply with judicial orders upon condition that the university make a reasonable attempt to notify the student in advance of compliance by the university.

Information identified as public information may be released to anyone without the student's written consent. This includes the student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weights and heights of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student.

A student may request his/her name, address, and telephone number not be included in the public student directory by checking the appropriate box on the quarterly registration form. A student may request that public information, other than directory information, not be made public by signing, during the first week of classes each quarter, a request to withhold information, available in the Office of Student Development. The university will not notify a student's hometown newspaper of outstanding academic achievement (e.g., if the student is named to the dean's list) if the student requests either of the above options.

Education records or personally identifiable information other than public information may be released without the written consent of the student to the following only: (a) other university officials who have legitimate educational interests; (b) officials of other schools in which the student intends to enroll, provided the student is informed of the record transfer, receives a copy of the record, if desired, and has an opportunity to challenge the content of the record; (c) authorized representatives of certain federal agencies, and education agencies, or state educational authorities under certain conditions; (d) in connection with a student's application for, or receipt of, financial aid; (e) state and local officials or authorities to whom information is specifically required to be reported or disclosed pursuant to the Ohio Revised Code adopted prior to November 19, 1974; (f) organizations conducting studies for, or on behalf of, educational agencies or institutions for the
purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction, if such studies are conducted in such a manner as will not permit the personal identification of students and their parents by persons other than representatives of such organizations and such information will be destroyed when no longer needed for the purpose for which it is conducted; (g) accrediting function; (h) parents of a dependent student as defined in section 152 of the Internal Revenue Code of 1957; (i) in connection with an emergency, appropriate persons may be advised if the knowledge of such information is necessary to protect the health and safety of the student or other persons; (j) in compliance with judicial order or pursuant to lawfully issued subpoena, upon condition a reasonable attempt to notify the student is made in advance of the compliance therewith.
Restricted parking zones
General and restricted (permit) parking zones
Signs in parking lot indicate which rows are restricted to permit holders.

1. Achilles Hill
2. Administrative Wing
3. Allyn Hall
4. Art Annex
5. Biological Sciences Building
6. Brehm Laboratory
7. Brown House
8. Campus Ministry Center
9. Creative Arts Center
10. Engineering and Mathematical Sciences Building
11. Fawcett Hall
12. Frederick A. White Center
13. Garden for the Senses (Clara E. Weisenborn)
14. Gaza House
15. Hamilton Hall
16. Health Sciences Building
17. Lowery House
18. Medical Sciences Building
19. Millett Hall
20. Oelman Hall
21. Physical Education (James A. Rhodes) Building
22. Rike Hall
23. Rockafeld House
24. Student Services
25. Television Center
26. Transportation Services Building
27. University Apartments
28. University Center
29. University Library
30. Warner House