Important Numbers

All phone numbers in area code 937 unless otherwise noted

General Information

Information Desk
775-5740  E147 Student Union

Telephone Registration: Raider Express
775-4400

Offices and Facilities

Admissions
- Undergraduate Admissions, Office of
  775-5700  E148 Student Union
- Graduate Admissions
  775-2976  E344 Student Union
- International Student Programs
  775-5745  E190 Student Union
- School of Medicine
  775-2934  210 Medical Sciences Bldg.
- School of Professional Psychology
  775-3492  110 Health Sciences Bldg.

Affirmative Action Programs
775-3207  224 Millett Hall

Alumni Relations
775-2620  Alumni/Foundation Bldg.

Asian, Hispanic, and Native American Center
775-2798  124 Allyn Hall

Athletics
775-2771  356 Nutter Center

Bolinga Cultural Resources Center
775-5645  E107 Student Union

Bookstore
775-5600  E182 Student Union

Bursar, Office of the
775-5650  E236 Student Union

Career Services
775-2556  E334 Student Union

Disability Services
775-5680  E186 Student Union

Educational Resource Center
775-2883  244 Millett Hall

Financial Aid, Office of
775-5721  E136 Student Union

Frederick A. White Health Center
775-2300  Frederick A. White Health Center

Honors Program
775-2660  179 Millett Hall

Housing (Office of Residence Services)
775-4172  6 Palms (in Forest Lane Apts.)

Parking Services
775-5690  E138 Student Union

Personal Counseling Services Center
775-3407  Frederick A. White Health Center

Public Safety
775-2056  065 Millett Hall

Registrar, Office of the
775-5588  E244 Student Union

Student Employment, Office of
775-2326  E334 Student Union

Student Health Services
775-2552  Frederick A. White Health Center

Student Life, Office of
775-5570  W034 Student Union

Student Union Administrative Office
775-5522  E005 Student Union

Union Activities Board
775-5550  W028 Student Union

University College
775-5750  180 University Hall

University Libraries
- Fordham Health Sciences Library
  775-2003  125D Medical Sciences Bldg.
- Paul Laurence Dunbar Library
  775-4125, Hours
  775-2525, Circulation

Veterans Affairs, Office of
775-5550  E244 Student Union

Women’s Center
775-4524  060 Rike Hall

Colleges and Schools

College of Business and Administration
775-2437  110 Rike Hall

College of Education and Human Services
775-2821  228 Millett Hall

College of Engineering and Computer Science
775-5001  405 Russ Engineering Center

College of Liberal Arts
775-2225  445 Millett Hall

College of Science and Mathematics
775-2611  134 Oelman Hall

School of Graduate Studies
775-2976  E344 Student Union

School of Medicine
775-3010  115 Medical Sciences Bldg.

School of Professional Psychology
775-3490  117 Health Sciences Bldg.

WSU-Miami Valley College of Nursing and Health
775-3131  160 University Hall

Wright State University–Lake Campus
1-800-237-1477, 419/586-0300
100 Dwyer Hall, 7600 State Route 703, Celina, Ohio 45822
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ACADEMIC CALENDARS

1999–2000

Fall Quarter

September 15–December 4, 1999

- September 15, Wednesday/First Day of Class
- November 11, Thursday/Veterans’ Day
- November 23, Tuesday/Last Day of Class
- November 24–28, Wednesday–Sunday/Thanksgiving Holiday (No Classes)
- November 29–December 4, Monday–Saturday/Final Examinations
- December 4, Saturday/Fall Commencement

Winter Quarter

January 3–March 18, 2000

- January 3, Monday/First Day of Class
- January 17, Monday/Martin Luther King Jr. Day Observed (No Classes)
- March 11, Saturday/Last Day of Class
- March 13–18, Monday–Saturday/Final Examinations

Spring Quarter

March 27–June 10, 2000

- March 27, Monday/First Day of Class
- May 29, Monday/Memorial Day (No Classes)
- June 3, Saturday/Last Day of Class
- June 5–10, Monday–Saturday/Final Examinations
- June 10, Saturday/Spring Commencement

Summer Quarter

June 12–August 17, 2000

- June 12, Monday/First Day of Class, Terms A and C
- July 4, Tuesday/Independence Day Observed (No Classes)
- July 13, Thursday/Last Day of Class, Term A
- July 17, Monday/First Day of Class, Term B
- August 17, Thursday/Last Day of Class, Terms B and C

2000–2001*

Fall Quarter

September 13–December 2, 2000

- September 13, Wednesday/First Day of Class
- November 10, Friday/Veterans’ Day Observed (No Classes)
- November 21, Tuesday/Last Day of Class
- November 22–26, Wednesday–Sunday/Thanksgiving Holiday (No Classes)
- November 27–December 2, Monday–Saturday/Final Examinations
- December 2, Saturday/Fall Commencement

Winter Quarter

January 2–March 17, 2001

- January 2, Tuesday/First Day of Class
- January 15, Monday/Martin Luther King Jr. Day Observed (No Classes)
- March 12, Monday/Last Day of Class
- March 13–17, Tuesday–Saturday/Final Examinations

Spring Quarter

March 26–June 9, 2001

- March 26, Monday/First Day of Class
- May 28, Monday/Memorial Day (No Classes)
- June 2, Saturday/Last Day of Class
- June 4–9, Monday–Saturday/Final Examinations
- June 9, Saturday/Spring Commencement

Summer Quarter

June 11–August 16, 2001

- June 11, Monday/First Day of Class, Terms A and C
- July 4, Wednesday/Independence Day Observed (No Classes)
- July 12, Thursday/Last Day of Class, Term A
- July 16, Monday/First Day of Class, Term B
- August 16, Thursday/Last Day of Class, Terms B and C

*The 2000–2001 Academic Calendar was tentative but not formally approved as this catalog went to press.
Wright State University

Wright State University, named after aviation pioneers Orville and Wilbur Wright, is a dynamic and diverse institution, with nearly 16,000 students pursuing studies in approximately 100 undergraduate majors and 40 graduate and professional degree programs, including the Ed.S., M.D., Psy.D., and Ph.D. degrees. In addition, the Wright State University—Lake Campus, a branch campus located between St. Marys and Celina, Ohio, offers associate and prebaccalaureate degree programs to over 600 students.

Wright State's 557-acre main campus, located 12 miles northeast of Dayton, has over 20 major buildings and a 200-acre biological preserve. The Ervin J. Nutter Center, a multipurpose sports and entertainment complex, seats 10,632 for Wright State Raiders basketball games and up to 12,000 for top-name entertainers and shows. The Russ Engineering Center opened its doors in fall 1992 and serves as a centerpiece of engineering education and research in the community. The Student Union provides a wide array of recreational facilities and houses the offices of the bursar, registrar, admissions, and financial aid, as well as numerous other offices. University Hall, Wright State's newest building, is home to the College of Nursing and Health and many administrative offices.

The University Libraries include the Paul Laurence Dunbar Library—named for the noted poet and Dayton native, the Fordham Health Sciences Library, and the Music Library. Wright State's was one of the first libraries in the state to introduce the new OhioLINK computer system, enabling students to search and request the holdings of more than 50 academic libraries in Ohio. The library's Department of Archives and Special Collections houses one of the world's most complete collections of original documents, memorabilia, and personal photographs from the Wright brothers. The collection has been featured on the Arts and Entertainment Channel's Biography series on the Wright brothers.

Wright State is nationally recognized as a leader in programs and services for people with disabilities. All campus buildings are designed to be accessible to people with disabilities, and most are joined by an extensive underground tunnel system.

The university seeks excellence in all of its academic programs, many of which receive national recognition. The Department of Theatre Arts is recognized as one of the premier performing arts centers for undergraduate training and performance in the nation. It is the only such arts program to win two prestigious Program Excellence Awards and two Academic Challenge Grants from the Ohio Board of Regents. The department has established a growing reputation for superior theatrical production of musicals and dramas and has been repeatedly spotlighted: by winning a record 14 awards from the American College Theatre Festival (ACTF) in 1997 for 1913: The Great Dayton Flood; by being the only university in a four-state region to take two productions to the XXI Kennedy Center ACTF regional competition in 1998; by the department's design technology area winning the United States Institute of Theatre Technology Olympics in 1995 and 1997; and, in the area of film, by winning awards from major film festivals across the world, from the most recent Audience Award at the Los Angeles Independent Film Festival to the Sundance Festival. Wright State accountancy majors have consistently taken top honors at the Student Case Competition, sponsored by the Institute of
Management Accountants, and in each of the past two years, WSU graduates earned the highest score in Ohio in the state's certified public accounting exam. The Department of Financial Services has also earned an Award of Excellence from the Ohio Board of Regents, and Wright State's Department of Chemistry ranks in the top 10 percent nationally in the number of bachelor's degree graduates certified by the American Chemical Society.

Wright State provides distance learning opportunities and collaborations through the Internet with government, industry, and regional agencies for both service and instruction. The College of Education and Human Services is linked with 40 school systems, and the College of Nursing and Health is linked with the Lake Campus to provide education in a rural area.

The main accreditation agency for Wright State is the North Central Association of Colleges and Schools. A full listing of accreditations and memberships can be found in the Appendix on page 347.

Wright State’s Community Partnerships

Wright State provides its students with unique opportunities to help solve real-world problems by addressing the educational, cultural, social, and economic needs of the Miami Valley. Students obtain hands-on learning experiences through the university’s link to area corporations, community programs, health and social service agencies, and government organizations. This blending of academia with the larger community provides benefits for both. At the heart of this mission is the scholar, who links the discovery of new knowledge to solving community problems and improving the quality of life for society.

With its commitment to service and collaboration, Wright State’s impact is felt most strongly here in the Miami Valley, where its partnerships improve the quality of life for everyone. Dayton’s Center for Healthy Communities, a partnership between Wright State’s Schools of Medicine and Professional Psychology, College of Nursing and Health, Department of Social Work, Sinclair Community College’s Allied Health Division and other health organizations, was selected as a national model for developing community partnerships in health care by the U.S. Department of Health and Human Services. The center brings together students in the health professions fields with residents of under served neighborhoods that need access to health services and wellness programs. The Information Technology Research Institute (ITRI), a cooperative research and development organization, is a partnership between Wright State and the Miami Valley’s industrial and governmental organizations involved in the burgeoning information technology field. The institute’s goal is to conduct basic and applied research and to speed university research to the marketplace.

Wright State Celebrates Diversity

Wright State has many programs and resources to help students of diverse backgrounds and cultures understand and accept one another.

As an equal opportunity/affirmative action institution, the university encourages and welcomes students of all ethnic and religious backgrounds, ages, and nationalities. Bringing these students together with an active campus life creates a rich intellectual and social experience—a complete university experience.

Providing academic and personal support to students, the Bolinga Cultural Resources Center promotes cultural diversity on campus and in the community through a variety of programs and activities celebrating the African American experience. The Asian, Hispanic, and Native American Center supports the academic, social, and cultural needs of Asian, Hispanic, and Native American students, faculty, and staff at the university, offering informational resources as well as programs consisting of guest speakers, workshops, film series, and celebrations of the Hispanic, Native American, and Asian heritage months. The University Center for International Education provides services to international students and Wright State students wishing to study abroad. The Women’s Center promotes diversity and gender equity through educational programs and activities that honor the roles, contributions, and experiences of all women.

An abbreviated version of Wright State’s equal opportunity/affirmative action and diversity statements can be found in the Appendix on pages 346 and 347. The complete text can be found on WSU’s web page at http://www.wright.edu/admin/affirm/affirm.html

The Lake Campus

Located on the shore of Grand Lake St. Marys between Celina and St. Marys, the Wright State University–Lake Campus serves Van Wert, Mercer, and Auglaize counties. It offers associate and baccalaureate degree programs, with day and evening classes, and a limited number of upper division and graduate courses. A range of courses at the bachelor’s and master’s levels is offered in education. The most recent additions to the college’s offerings are the master’s degree in business administration (MBA 2000 program) offered through the College of Business and Administration: an outreach nursing program from the College of Nursing and Health that will permit RNs to earn a BSN; and a 2+2 Technical Education Bachelor’s Degree program in cooperation with Ohio Northern University. The Lake Campus also offers a variety of preprofessional and certificate programs, and it provides students with a transfer module to ease their transition into bachelor’s degree programs.
Student Life at Wright State

Wright State has a diverse mixture of students with various educational goals and interests. The majority of our students—76 percent or about 11,900—are undergraduates, and of those, about 10,700 are full time. Although the majority of these students come from southwestern Ohio, many also come from other parts of Ohio, from almost every state in the nation, and from 62 other countries.

Nearly 2,200 students live in campus housing, in either traditional dormitory-style rooms, suite-style rooms, or apartments, all offering direct Internet connections. Approximately 1,000 first-year students chose to live on campus in fall 1998.

Many of our students are older (mean age is 26 years) and, in addition to their academic work, have other major responsibilities such as a family and/or full-time job. Many of these students attend classes in the evening, a time that sees almost as much campus activity as during the day. Regardless of background and career goals, our students provide the basis for a campus rich in cultural and intellectual diversity.

Both commuting and residential students make for an active campus life. Over 100 student clubs and organizations provide recreational, professional, and entertainment activities, such as the Artist Series Program. Also popular are the university’s two theatres and concert halls, and the Student Union, which has extensive recreational facilities, including a fitness center, a small gymnasium, racquetball and squash courts, and an Olympic-size indoor pool.

Wright State students have distinguished themselves academically, both on the state and national level. For example, in 1999 Wright State students competed with 200 colleges and universities from fifteen different countries that debate each year at the Model United Nations program held in New York City and secured the longest winning streak on record—20 years. Wright State ranks third among Ohio’s state-assisted colleges and public universities in sponsored research, which includes disciplines important to regional industry and economic development. For the past five years, WSU students have achieved a 100 percent success rate in passing the Professional Education Test of the National Teacher’s Exam.

In recognition of its innovations in teaching and research, the Department of Mathematics and Statistics has received Academic Challenge Grants from the Ohio Board of Regents and highly selective external funding awards from the National Science Foundation and other federal agencies. In addition, undergraduate students in the Department of Mathematics and Statistics compete each year in the William Lowell Putnam Mathematical Competition.

The student is the focus of attention at Wright State University. Although Wright State students do not easily fall into specific categories, all are valued for their unique talents and contributions. In a supportive learning environment, Wright State faculty challenge their students, encouraging them to realize their potential, to reach their goals, and to fulfill their dreams. As a result, Wright State continues to attract achievement-oriented students who are eager to learn.
Degrees and Areas of Study

Wright State University offers undergraduate programs in the Colleges of Business and Administration, Education and Human Services, Engineering and Computer Science, Liberal Arts, Nursing and Health, and Science and Mathematics; and through the Wright State University-Lake Campus. Graduate programs are offered through the School of Graduate Studies. The Schools of Medicine and Professional Psychology offer professional and other postbaccalaureate programs.

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 Biomedical Engineering (B.S.B.E.)
- Bachelor of Science in Business (B.S.B.)
- Bachelor of Science in Computer Engineering (B.S.C.E.)
- Bachelor of Science in Computer Science (B.S.C.S.)
- Bachelor of Science in Education (B.S.Ed.)
- Bachelor of Science in Electrical Engineering (B.S.E.E.)
- Bachelor of Science in Engineering Physics (B.S.E.P.)
- Bachelor of Science in Human Factors Engineering (B.S.H.F.E.)
- Bachelor of Science in Materials Science and Engineering (B.S.M.S.E.)
- Bachelor of Science in Mechanical Engineering (B.S.M.E.)
- Bachelor of Science in Medical Technology (B.S.M.T.)
- Bachelor of Science in Nursing (B.S.N.)

The following associate degrees, available only at the Wright State University-Lake Campus, are also granted: Associate of Arts (A.A.), Associate of Science (A.S.), Associate of Applied Business (A.A.B.), Associate of Applied Science (A.A.S.), and Associate of Technical Study (A.T.S.).

The following descriptions give a brief overview of the colleges and schools, and list the fields of study for which Wright State offers baccalaureate degree programs.

College of Business and Administration—see page 65

Bachelor of Science in Business degree programs are offered with majors in accountancy, business economics, finance, financial services, human resource management, management, management information systems, operations management, and marketing. The college also offers a Master of Business Administration degree and a Master of Science in Social and Applied Economics degree.

Baccalaureate Programs in Business and Administration
- Accountancy (B.S.B.)
- Business Economics (B.S.B.)
- Finance (B.S.B.)
- Financial Services (B.S.B.)
- Human Resource Management (B.S.B.)
- International Business (B.S.B.)
- Management (B.S.B.)
- Management Information Systems (B.S.B.)
- Operations Management (B.S.B.)
- Marketing (B.S.B.)

College of Education and Human Services—see page 81

Primarily 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 and rehabilitation. The college awards the Bachelor of Science in Education and Bachelor of Science degrees. The college also offers master's degrees and the Educational Specialist degree.

Baccalaureate Programs in Education and Human Services
- Athletic Training (B.S.Ed.)
- Early Childhood Education (Pre-K–3, Ages 0–8) (B.S.Ed.)
- Health and Physical Education (Multi-Age, Pre-K–12, Ages 3–21) (B.S.Ed.)
- Integrated Business Education (B.S.Ed.)
- Marketing Education (B.S.Ed.)
- Middle Childhood Education, Grades 4–8 (B.S.Ed.)
- Rehabilitation Services (B.S.)
- Vocational Education (B.S.Ed.)

College of Engineering and Computer Science—see page 99

The college offers programs leading to Bachelor of Science degrees. Programs of study include biomedical engineering, computer engineering, computer science, electrical engineering, engineering physics, human factors engineering, materials science and engineering, and mechanical engineering. Each of the programs includes cooperative education opportunities. The college also offers master's degrees and a doctoral degree in engineering and master's degrees and a doctoral degree in computer science and computer engineering.
Baccalaureate Programs in Engineering and Computer Science
Biomedical Engineering (B.S.B.E.)
Computer Engineering (B.S.C.E.)
Computer Science (B.S.C.S.)
Electrical Engineering (B.S.E.E.)
Engineering Physics (B.S.E.P.)
Human Factors Engineering (B.S.H.F.E.)
Materials Science and Engineering (B.S.M.S.E.)
Mechanical Engineering (B.S.M.E.)

College of Liberal Arts—see page 113

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. The college also offers master’s degrees.

Baccalaureate Programs in Liberal Arts
Acting (B.F.A.)
Acting—Musical Theatre (B.F.A.)
Anthropology (B.A.)
Art (B.A., B.F.A.)
Art History (B.A.)
Art History/Art Studio (B.A.)
Classical Humanities (B.A.)
Communication Studies (B.A.)
Dance (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.)
Integrated Language Arts/English Education (B.A.)
International Studies (B.A.)
Latin (B.A.)
Mass Communication (B.A.)
Modern Languages (B.A.)
Motion Picture History, Theory, and Criticism (B.A.)
Motion Picture Production (B.F.A.)
Music (B.A.)
Music Education (B.Mus.)
Music History and Literature (B.Mus.)
Music Performance (B.Mus.)
Organizational Communication (B.A.)
Philosophy (B.A.)
Political Science (B.A.)
Religion (B.A.)
Selected Studies (B.A., B.F.A.)
Social and Industrial Communication (B.A.)*
Social Science Education (B.A.)

Social Work (B.A.)
Sociology (B.A.)
Spanish (B.A.)
Theatre Design/Technology/Stage Management (B.F.A.)
Theatre Studies (B.A.)
Urban Affairs (B.A., B.S.)
Women’s Studies (B.A.)

*Dual major

College of Science and Mathematics—see page 155

The college offers programs leading to the Bachelor of Science, Bachelor of Science in Medical Technology, and Bachelor of Arts degrees as well as interdisciplinary programs. The college also offers master’s degrees and doctoral degrees.

Baccalaureate Programs in Science and Mathematics
Biological Sciences (B.S., B.A.)
Biological Sciences Education (B.S., B.A.)
Chemistry (B.S., B.A.)
Environmental Sciences (B.S.)
Geological Sciences (B.S., B.A.)
Geological Sciences Education (B.A.)
Integrated Science Education (B.S.)
Mathematics (B.S., B.A.)
Medical Technology (B.S.M.T.)
Physics (B.S., B.A.)
Physics Education (B.A.)
Psychology (B.S., B.A.)

Wright State University-Miami Valley College of Nursing and Health—see page 151

The program in nursing at Wright State leads to the Bachelor of Science in Nursing degree, which qualifies the graduate for the National Council of State Boards Licensing examination (NCLEX) required for state licensure as a registered nurse. The college also offers a B.S.N. completion program for registered nurses and a Master of Science program.

Baccalaureate Program in Nursing
Nursing (B.S.N.)
Minors

A minor program is a structured and coherent secondary concentration of study. It gives undergraduates the option of studying a second field of specialization in addition to a major as part of their studies at the university. Students interested in pursuing a minor should confer with the appropriate department for details.

The university offers minors in the following areas:

| African and African-American Studies | Materials Science and Engineering |
| Anthropology                      | Mathematics                        |
| Business                          | Music                              |
| Classical Humanities              | Operations                         |
| Communication                    | Management                         |
| Economics                         | Physics                            |
| English                           | Political Science                  |
| French                            | Psychology                         |
| Geography                         | Rehabilitation                     |
| Geological Sciences               | Services                           |
| Health Sciences                   | Religion                           |
| History                           | Sociology                          |
| Management                        | Spanish                            |
| Management Information Systems    | Statistics                         |
| Marketing                         | Urban Affairs                      |
|                                   | Women’s Studies                    |

Certificates

The university’s main campus offers certificate programs in the following areas: cartography, photogrammetry, and remote sensing; gerontology; object-oriented programming; professional writing; teaching English to speakers of other languages (TESOL); and technical writing. The WSU–Lake Campus offers certificates in CAD/CAM, desktop publishing, management and advanced management, microcomputer applications, and word processing. Students who are interested in one of the certificate programs should contact their academic advisor for further information.

Lake Campus

The Lake Campus offers the Associate of Arts and Associate of Science degrees, as well as a variety of two-year Associate of Applied Business, Associate of Applied Science, and Associate of Technical Study degree programs. These programs are described in more detail beginning on page 182.

The School of Graduate Studies

The School of Graduate Studies is responsible for 34 master’s degree programs, a post-master’s degree (Educational Specialist), Doctor of Philosophy degrees in biomedical sciences, computer science and engineering, engineering, and human factors and industrial/organizational psychology, as well as courses for certification programs in education, and courses for various certificate programs. Master’s degrees are offered in the following fields of study:

Master of Accountancy

Master of Arts

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

Master of Business Administration

Business economics, finance, health care management, international business, logistics management, management, management information systems, marketing, nursing administration, operations management, project management

Master of Education

Classroom teacher, educational leadership, educational technology, student personnel services

Master of Humanities

Master of Music

Music education

Master of Rehabilitation Counseling

Chemical dependency, severe disabilities

Master of Science

Aerospace medicine, anatomy, applied statistics, biochemistry and molecular biology, biological sciences, chemistry, computer science, counseling, geological sciences, human factors and industrial/organizational psychology, logistics management, mathematics, microbiology and immunology, nursing, nursing administration, physics, physiology and biophysics, selected graduate studies, social and applied economics

Master of Science in Computer Engineering

Master of Science in Engineering

Biomedical, electrical, human factors, materials science and engineering, mechanical

Master of Science in Teaching

Earth science, physics

Master of Urban Administration

The School of Medicine

The School of Medicine’s educational program prepares students for graduate medical education (residency training) in their field of choice. Graduates of this four-year program receive the Doctor of Medicine (M.D.) degree.
The School of Professional Psychology

The School of Professional Psychology offers a doctoral program in clinical psychology that prepares students for work as professional psychologists. The program requires approximately four years of study and grants the Doctor of Psychology (Psy.D.) degree.

Alternative Academic Programs

University Honors Program

The University Honors Program is designed to meet the special needs of a diverse population of academically well-prepared students. First-year students can qualify by meeting two of the following criteria:

- a high school GPA of 3.25 or better;
- a ranking in the top 10 percent of their graduating class; or
- a score at or above the 90th percentile on the ACT.

Continuing Wright State students and transfer students with a GPA of 3.0 or better are eligible to participate.

The Honors Program is also interested in students who may not quite meet these qualifications but who bring some special contribution or determination to the program. Such students will be permitted to enroll in selected honors courses where they can demonstrate that they merit full participation.

The Honors curriculum offers three types of undergraduate courses: a wide variety of the general education courses is presented in special Honors sections; popular introductory courses in certain majors are offered as Honors courses; and special interdisciplinary courses are offered for sophomores, juniors, and seniors. Honors students also pursue special programs of study in their majors, usually in their junior or senior year. These programs involve independent study with a faculty mentor and culminate in a research report, design project, or senior thesis. Each department, college, or school has its own admissions and performance criteria, which are available for review in the Honors office.

Students may graduate with one of three Honors designations by completing the following sets of requirements:

A. To graduate with the distinction “University Honors Scholar,” students must

1. Complete eight Honors courses with grades of B or better, including (a) at least one course from the UH 201, 202, 203 sequence; (b) at least three courses that are classified as General Education courses (these may include UH 201, 202, 203); and (c) at least two interdisciplinary seminars (UH 400).

2. Successfully complete a departmental, school, or college Honors program.

B. To graduate with the distinction “General Studies Honors Scholar,” students must complete eight Honors courses (as described above for “University Honors Scholars”) with grades of B or better and attain a cumulative GPA of 3.4 or better.

C. To graduate “With Honors” in their major fields, students must complete a departmental, school, or college Honors program.

Students normally complete the Honors Program by taking three Honors courses their first year, three as a sophomore, one as a junior, and one as a senior. However, students are free to take as many or as few courses as their interest and program requirements permit. All Honors courses are designated as Honors on transcripts, and students who complete the program receive special designations on their transcripts and in the commencement program.

The Honors Program also offers opportunities for social, cultural, and leadership development through participation in the Student Honors Association; Service First; the Mid-East Honors Association; the National Collegiate Honors Council; and the University Honors Committee. Boston Hall, located in the Woods Community, serves as the Honors residence hall. Boston features extended quiet hours, special programming, and a computer/study lounge. Honors students also have the opportunity to become involved in community government. The Honors Program awards scholarships to both incoming and continuing honors students. Small grants are available for students working on honors projects, and some financial assistance is available for Honors program students who wish to study abroad.

Interested students should contact the Honors Program office for further information and applications: (937) 775-2660, 179 Millett, honors@wright.edu
Preprofessional Programs

Premedical and Predental Study

There is no specific preferred major for premedicine or predentistry. Students may choose from a variety of undergraduate majors; however, they need to complete certain required courses for admission. Most applicants major in biology or chemistry, but it is important to choose a major in a field of interest to the student. Numerous majors allow students to take required pre-med courses and use the credits to fulfill electives in the major. In addition, there are numerous recommended courses, primarily in the sciences, which would make students more competitive applicants. Since the competition for admission is so strong, each student needs to maintain a high GPA (approximately a 3.5), do well on the Medical College Admission Test (MCAT), which is generally taken in April of the junior year, and be active in community volunteer work.

Planning and performance are important. Students should work with an academic advisor to plan the freshman-year class schedule, which would, ideally, include chemistry 121, 122, and 123, among other courses. A student with Math Placement Level of 3 or lower may be delayed entrance into chemistry courses, so it is important to plan ahead.

Beginning their sophomore year, students should meet annually with the premedical advisor to plan their class schedules and make sure that they are taking the required courses. The premedical advisor also can suggest other courses that will help improve a student’s performance on the MCAT.

The following courses are required for medical school admission. (Depending on the student’s major, they may be taken as part of the degree requirements or in addition to the degree requirements):

- BIO 112 Cell Biology and Genetics
- BIO 114 Organismic Biology
- BIO 115 Diversity and Ecology
- CHM 121 Submicroscopic Chemistry
- CHM 122 Macromolecular Chemistry
- CHM 123 Reaction Dynamics
- CHM 211/215 Organic Chemistry I and lab
- CHM 212/216 Organic Chemistry II and lab
- CHM 213/217 Organic Chemistry III and lab
- PHY 111/101 Physics I and lab
- PHY 112/102 Physics II and lab
- PHY 113/103 Physics III and lab
- ENG 101, 102, and one other writing course (for a total of one year of English)
- MTH College Algebra and Trigonometry (MTH 130 and 131 or MTH 134)

Recommended courses include:
- BMB 421, 423, and 427 Biochemistry and Molecular Biology
- P&B 301 and 302 Human Physiology
- M&I 220 Pathogenic Microbiology
- ANT 201 and 202 Human Anatomy
- BIO 210, 211, and 212 Molecular Biology, Cell Biology, and Genetics
- PHR 340 Pharmacology
- PHL 378 or REL 378 Bioethics

Students who have received Advanced Placement (AP) credits from their high school science courses should take additional upper-level courses in those sciences to demonstrate proficiency. For example, a student who has placed out of a whole year of biology (BIO 112, 114, 115) should be sure to take some 200-level biology courses to demonstrate the ability to achieve in college-level biology.

Prelaw Study

Prelaw is not a major or degree program, so students are free to choose from a wide variety of undergraduate majors. Many different areas of study can prepare students for law studies. When choosing a major, students should select an area in which they have a strong interest and in which they can do well academically. The prelaw advisor at Wright State will help plan a personal prelaw program.

To a large extent, admission to law school depends on the basic skills that students master as an undergraduate. The ability to communicate, reason clearly, and think independently are more important than the area of a student’s major. Many disciplines help build these skills. Speaking and writing skills can be sharpened in a history class as well as in a literature class, and reasoning ability can be developed in a chemistry lab as well as in a philosophy seminar.

Competition for admission to law school is keen, and a student’s academic record is one of the key criteria. A major in political science, business, history, or other fields connected with law does not guarantee admission. An excellent academic record in the sciences, math, languages, or other areas that are not usually associated with law may have equal or even greater appeal to law schools.

Suggested Courses for Prelaw Study

The following courses can provide a taste of what the study of law is about and what those who choose a legal career can expect. Students may take as many or as few of these courses as they like. These courses are neither a prelaw program nor prerequisites for law school, and they do not relate to the intensive approach used in law school studies.

- ACC 201, 202 Accounting Concepts and Principles I, II, III
- ACC 203 Introduction to Accounting Systems
- COM 232 Argumentation and Debate
- EC 201, 202, 203 Principles of Economics
**Interdisciplinary Study**

Interdisciplinary study gives students a chance to explore different areas or to tailor a major to their interests. Many courses are offered jointly by cooperating departments. Students can also combine work in two different departments for a double or dual major. The selected studies major offered by the College of Liberal Arts allows students to pursue a self-designed course of study, culminating in a senior project, in an area where a major is not currently available. For more information on any of the programs, students should see the selected studies advisor.

**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 that includes many colleges and universities in the area. Full-time students at Wright State may cross-register for credit at member schools at Wright State’s tuition rates as long as class space is available, they have their advisor’s consent, and the course isn’t offered at Wright State. They 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.

**Student Exchange and Study Abroad**

Students can study abroad through a variety of international programs offered through Wright State. The three-week summer Ambassador Program in Brazil or Japan provides an introductory experience with independent study credit available. Wright State’s consortium study abroad program offers a full array of courses in foreign language study and in a variety of disciplines, many of which are taught in English. Courses can be taken during a summer, semester, or year academic program. The consortium countries include: Australia, Chile, China, Costa Rica, Denmark, England, France, Germany, Israel, Italy, Malta, New Zealand, Scotland, Spain, and Thailand. Wright State also offers exchange programs with universities in England, France, and Sweden. For these programs, students pay Wright State tuition. For all Wright State exchange and study abroad programs, students can apply their student scholarships and loans.

**Cooperative Education**

Cooperative education is available through Career Services and offers students the opportunity to work full time or part time in a career-related position. Job placements are monitored by the Career Services staff or by faculty. Academic credit for work experience may be earned in some departments. In all departments, students are required to register with Career Services, and the work experience and employer name are recorded on the transcript.

Through this 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.
**Officer Training/ROTC**

The Army and Air Force offer the Reserve Officer Training Corps (ROTC) program to all qualified students. 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 and depending on the scholarship amount pays the student's tuition, buys all books, and provides $150 a month. Students involved in the Advanced (Army) or contracted in the Professional Officer (Air Force) course also receive $150 a 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 make the ROTC program available to freshmen and sophomores or to 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 and management skills 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. During the summer quarter between the junior and senior years, students attend a six-week ROTC Advanced Camp that 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 of a second lieutenant.

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

Further information is available in the Department of Military Science (Army) and the Department of Aerospace Studies (Air Force).

**University Libraries**

The Wright State University Libraries include the Paul Laurence Dunbar Library, the Fordham Health Sciences Library located in the Medical Sciences Building, and the Music Library in the Creative Arts Building.

The University Libraries are members of OhioLINK, an advanced computer network providing access to over 30 million library items in Ohio's universities, college, and State Library collections. Students can order books online from OhioLINK libraries and receive them for check-out within two to three days. OhioLINK resources also include scores of research databases and the full text of thousands of journals and other works.

LIBNET, the Libraries' information research system, uses a Web-based interface to provide integrated access to local and OhioLINK resources and to many other resources available on the Internet.

**Other Services**

- Instructional sessions for all library services and resources
- Current periodicals and microfilm resources (microfilm readers and printers)
- Course reserves (online and print)
- Media collections (videos, films, preview equipment)
- Music Library (20,000 scores and over 6,000 musical recordings)
- Reference assistance (individual or group instructions and handouts)
- Interlibrary loan services for items not available at Wright State or through OhioLINK

**Paul Laurence Dunbar Library**

The Paul Laurence Dunbar Library plays an important role in instruction and research activities at Wright State University. The library collections, among the largest in the Dayton metropolitan area, include over 590,000 bound volumes, over one million microforms, 350,000 government documents, 4,000 serial subscriptions, and more than 4,000 media or visual items. The library is open over 100 hours per week, longer during exam periods. In addition to the walk-in assistance available in the information/reference area during most hours, students may make appointments with reference librarians for in-depth assistance.

Librarians also offer group instruction through a series of regularly offered workshops on topics
ranging from basic LIBNET introduction to
advanced searching of Web resources and
specialized databases.

As a partial U.S. government documents
depository, the library provides students and the
general public with access to electronic and print
documents, including over 30,000 geographical and
topographical maps from all over the United States.

Special Collections and Archives houses
collections on aviation history, Wright State
University history, and one of the most extensive
collections of Wright brothers materials, including
more than 4,000 original photographs made by the
Wrights to document their achievements.

Special collections of the Fordham Library
include the McFarland Collection in aerospace
medicine and human factors engineering, the
Aerospace Medical Association Archives, and the
Wright State health sciences programs archives. The
Thelma Fordham Pruett Rare Book Room houses
two American 18th- and 19th-century medical
books.

Computer Resources

Computing and Telecommunication Services
(CaTS) provide connectivity to a wide range of
computing and information resources through the
campus network. These resources are multi-user
systems maintained by CaTS and the College of
Computer Science and Engineering (i.e., Hitachi,
Digital VAX, UNIX), and include the Wright State
University Libraries' catalogs, OhioLINK Libraries'
catalogs, electronic mail, and other INTERNET
resources.

CaTS provides direct connectivity to the
campus network at public workstations located in the
basement of the Library Annex. These are student
labs with full network services, including word
processing, spreadsheets, INTERNET connectivity,
and a variety of specific course-related software.
These laboratories have a range of printers, scanners,
and CD ROMs available for student usage. In
addition to these public workstations, many colleges
and academic departments provide additional
resources for their majors.

All students are eligible to receive an account
for access to these systems, thus enabling access to
INTERNET resources. For more information on
CaTS services and training, contact the CaTS Help

The Fordham Health Sciences Library

The Fordham Health Sciences Library serves
as the primary library for students in the College
of Nursing and Health and Schools of Medicine
and Professional Psychology. The Fordham Library
contains 115,000 bound volumes, 1,300 serial
subscriptions, and more than 12,000 microforms.
The collections also contain audio-visual programs
related to the health sciences and equipment for
viewing or listening to these programs. Videotaped
lectures are available for selected courses in the
College of Nursing and Health. Group study rooms
are also available for nursing students. The library
is open 98 hours a week.

A unique cooperative relationship among
the area's hospital libraries and the Fordham
Health Sciences Library promotes sharing and
nonduplication of library materials as well as
reciprocal library services for students and
professionals in the health care fields. Seven
of the hospital libraries participate in OhioLINK;
over 100,000 volumes in these affiliated libraries
complement the university collections.
Student Services

In addition to classes and academic programs, Wright State has many services, facilities, and activities designed to help students enjoy all of the benefits of university life and develop interpersonal and leadership skills. The student affairs offices are staffed by professionals trained to help students appreciate other cultures, develop leadership and life skills, clarify values, model ethical behavior, and encourage healthy relationships and lifestyles. Most of these services are free, and students are invited to visit the offices any time.

Services for Students with Disabilities

Wright State is a leader in providing support services and an accessible campus for students with physical and learning disabilities. The Office of Disability Services offers services, programs, and activities that allow students with disabilities to participate in all facets of university life according to their unique abilities and interests.

Physical support services include personal assistance, information on accessible on-campus and off-campus housing, campus mobility orientation, and other services to promote independence. Academic support services include test proctoring, textbooks in alternate formats, an adapted computer lab, interpreter services, and other specialized services. The Office of Disability Services also helps students with disabilities plan and implement career choices. A broad range of adapted athletic, intra-mural, and recreational activities is also available.

Students must contact Disability Services before enrolling to plan for necessary support services.

University Center for International Education

The University Center for International Education offers student services to international students and Wright State students wishing to study abroad. The UCIE works with the campus community to ensure an international dimension to the university’s three major functions of teaching, research, and service.

The International Admissions Office and the Office of International Student Programs assist international students and scholars before and during their stay at Wright State. Besides processing admissions and offering orientation to international students, the UCIE also assists with off-campus housing and with immigration regulation advising and record keeping. Re-entry counseling is available for international students returning to their home countries. International students can also participate in an off-campus host family program coordinated by the UCIE.

The Exchange and Study Abroad Program office provides services to Wright State students for teaching, research, and study abroad. Both American and international students can participate in these programs. Opportunities range from the three-week summer Ambassador Program in Japan or Brazil, to a summer, semester, or year academic program in one of 15 countries around the world.

The UCIE also offers programming for all students, including social gatherings, cultural programs, foreign language conversation hours, international lectures, the annual international festival, and many other opportunities to experience an international dimension at Wright State.

Career Services

Wright State offers a number of services to help students find temporary employment or further their search for career employment through Career Services. Students may avail themselves of individual career advising, a career resources center, student employment and career employment job fairs, Career Services’ web page, and interviewing opportunities. Academic courses are available that focus on career choices, career development, and changing from college to career employment.

Students find temporary employment through both the Student Employment and Cooperative Education Programs. Through Cooperative Education/Internships, students gain practical, career-related experience that is essential in acquiring career employment upon graduation. Visit Career Services’ web page at http://career.wright.edu

Center for Psychological Services

The Center for Psychological Services offers a variety of services to students who require assistance in coping with personal or emotional concerns. The center’s staff helps students learn to integrate their academic and personal lives through individual and group counseling. Counselors work with students who are experiencing test anxiety, fear of failure, depression, adjusting to college, changing values, uncertainty about their future plans, or who have a desire to learn more about themselves, including how to relate more effectively with others. All communications with counselors maintain the individual students’ confidentiality and privacy.

Students who wish to discuss these or other personal concerns with a staff member may call for an appointment at (937) 775-3407. The center is open Monday through Friday, 8:30 a.m. to 5 p.m., and is located on the second floor of the Frederick A. White Health Center.
Veterans Affairs

Veterans who are eligible for education benefits through the Office of Veterans Affairs may contact Wright State’s veterans affairs office for assistance in applying for benefits. The office also helps dependents, spouses, and children of deceased or completely disabled veterans who qualify for education benefits.

Student Health Services

Students who need attention for minor illnesses or injuries may see a nurse in the Office of Student Health Services for no charge (except for lab fees or immunizations, where applicable). Those who need the attention of a physician are referred to the Frederick A. White Health Center on campus or to a physician off campus for an additional charge. Student insurance is handled by Student Health Services; purchase of this insurance will help protect students from the high cost of hospital and doctor bills. Students also have the option to enroll dependents as part of this program. Brochures are available in Student Health Services.

Public Safety

Public Safety, the official law enforcement agency for the university, provides police services 24 hours a day. Among the services provided are personal safety escorts, a crime prevention unit, and educational programs that focus on the topics of crime awareness and prevention. To increase safety within the campus community, emergency phones are located throughout the campus in buildings, parking lots, and other remote areas. These phones ring directly into the Public Safety Communications Center to ensure an immediate response to all potential emergency situations.

Parking and Transportation

Campus Shuttle Service

Campus shuttle service is provided to remote lot 20 and the Nutter Center from approximately 7:30 a.m. to 10 p.m. on Monday through Thursday and 7:30 a.m. to 6 p.m. on Friday, during fall, winter, and spring quarters.

Permit Zones

Commuter students may purchase a C or E (Evening C) parking permit to park in core campus lots. A remote parking permit is available for parking in Lot 20 and at the Nutter Center in Lots 7 and 8. Residence students are eligible to purchase a permit to park in the residence zones based on availability attained by the Residence Services lottery.

Parking Meters

Parking meters are located on University Boulevard and in Lot 11.

Public Regional Transit

The Miami Valley Regional Transit Authority (RTA) provides county-wide public transportation to residents of Montgomery County. Included as part of RTA’s service area is Wright State University’s main campus.

RTA Route number 13 provides year-round transportation between downtown Dayton and WSU, Monday through Saturday. Summer schedules may vary. For information, call 226-1144.

For complete information on campus parking permits, regulation, shuttle service and RTA schedules, contact Parking and Transportation, E138 Student Union, 775-5690.

Bolinga Cultural Resources Center

Opened in 1971 as a tribute to Dr. Martin Luther King, Jr., the Bolinga Cultural Resources Center promotes cultural diversity through programs, activities, and forums that celebrate the African American experience. The center also provides academic and personal support to students. Individual counseling is available by scheduling appointments with Bolinga Center staff, and a number of student organizations such as Black Men on The Move, Black Women Striving Forward, and the McLin Scholars Association offer peer support.

Women’s Center

The Women’s Center serves as an information clearinghouse on women’s issues and services, fostering greater ties between women at Wright State and women in the community. The center promotes gender equity through educational programs and activities that honor the roles, contributions, and experiences of all women. The center also provides resource support for the Women’s Studies program and accommodates meetings, workshops, and other small group gatherings that address the concerns and interests of women on campus.

Asian/Hispanic/Native American Center

The Asian/Hispanic/Native American Center was created in October 1997 to support the academic, social, and cultural needs of Asian, Hispanic, and Native American students, faculty, and staff at the university. It also serves as an informational resource center regarding the Asian, Hispanic, Native American experience and creates
an appreciation and understanding of the diverse Asian, Hispanic, and Native American cultures represented within the community. The center’s programs consist of guest speakers, workshops, film series, and celebrations of the Hispanic, Native American, and Asian Heritage Months.

Facilities

Student Union

The Student Union is the community center of the university, providing services and conveniences that students, faculty, staff, and alumni need in their daily lives. The facility houses student clubs, study lounges, the University Bookstore, an art gallery, fitness center, arcade, billiards room, swimming pool, gymnasia, meeting rooms, student services, and more. Dining services include the Union Station food court, The Depot convenience store, cafeteria, Faculty Dining Room, and the Rathskellar.

The Student Union sponsors programs and leadership initiatives that help individuals get to know and understand one another. The Student Union complements the academic experience by offering an extensive variety of cultural, educational, social, and recreational programs, ranging from comedians and bands to classical concerts. The student-centered programs provide opportunity to balance course work and free time as cooperative factors in education.

Campus Housing

Wright State offers residential communities housing over 2,300 students, with 10 residence halls for traditional-aged single students; 10 apartments for upperclass, single students; and three apartments for nontraditional and graduate students. The C.H.O.I.C.E. (Celebrating Healthy Options in the College Environment) residence program is offered to students desiring a substance-free environment. University Honors students can live in the Honors Residence Hall. The Hamilton Living-Learning Center focuses on academic success for first-year students, providing tutoring, workshops, and study groups based on general education courses. Campus Housing provides an environment and programs that advance the educational goals of resident students and Wright State University.

Food Service

Food service on campus is contracted with Sodexo Management Services. Sodexo offers a range of outlets from nationally recognized concepts such as Pizza Hut, Burger King, and Taco Bell to cafeteria-style service and gourmet catering. Also located on campus is the Depot convenience store and our own wood-fired "Brick House" pizza in the Rathskellar. A variety of quarterly food plans are available to residential and commuting students as well as to faculty and staff.

Co-Curricular Activities

Campus Recreation

The Office of Campus Recreation is dedicated to providing quality recreational opportunities for the Wright State community. To meet the diverse needs and interests of students, faculty, and staff, a comprehensive and innovative program has been developed. A variety of activities exist to promote healthy life-styles, positive human relationships, productive sportsmanship, and fair play.

The Student Union’s recreational facilities include a fitness center, gymnasia, swimming pool, racquetball and squash courts, billiards room, game arcade, the Campus Recreation offices, and outdoor playfields. The Nutter Center is home for evening open recreation and intramural sports activities in the gymnasia, weighted room, indoor running track, and outdoor tennis courts.

The Campus Recreation program offers a variety of activities in competitive intramural sports, recreational sports, tournaments and special events, fitness, noncredit instruction, adapted recreation and athletics, outdoor recreation, and sport clubs in which undergraduate students are encouraged to participate. Leagues exist in team sports including basketball, bowling, flag football, innterube waterpolo, soccer, softball, volleyball, wallyball water basketball and volleyball, and various wheelchair sports. Individual sports include badminton, golf, racquetball, table tennis, and tennis. Outdoor recreation activities include biking, canoeing, downhill skiing, horseback riding, and whitewater rafting, as well as instructional clinics in rock climbing, kayaking, sailing, and scuba. Noncredit instruction is available in numerous aerobics and spinning sessions.

A]ll sports and recreational activities are inclusive. Please contact our office if you need assistance or adaptation to participate fully in any of our programs. Additional information can be obtained by contacting the Office of Campus Recreation, E009 Student Union, (937) 775-5815.
Sports

The university offers a broad program of both intercollegiate and intramural sports for men and women. Wright State’s student-athletes compete in NCAA Division I and the Midwestern Collegiate Conference. Men's and women's sports opportunities include basketball, cross country, soccer, swimming, and tennis. In addition, the university offers baseball and golf for men, and softball and volleyball for women.

Music

In addition to offering private lessons and academic programs in music, the Department of Music gives all students a chance to participate in instrumental and choral ensembles. These groups provide diverse opportunities ranging from jazz and gospel to classical tradition. Several of the ensembles require no audition.

Cultural Activities

The University Theatre presents eight major productions, numerous one-act plays, dance performances, and screenings of full-length and student films. The Theatre Department annually sponsors a Big Lens Festival of student films.

The University Art Galleries in the Creative Arts Center, run by the Department of Art and Art History, schedules six fine art exhibitions each year, which are free and open to the public. The Experimental Gallery, part of the same complex, houses frequently changing exhibitions of student art work.

The Union Activities Board (UAB), operated by students for students, schedules a wide variety of events including videos, guest speakers, comedy/ novelty entertainment, concerts, recreational tournaments, cultural activities, and a highly regarded film series featuring foreign, cult classics, and avant garde films.

The University Artist Series brings internationally known performing artists to the campus throughout the year.

Organizations and Activities

Wright State has more than 100 registered student organizations including:
Student Government
Inter-Club Council
Black Student Union
Greek Council
Union Activities Board
Lambda Union
National social sororities and fraternities
The Guardian, student newspaper

WSU, student radio station
Nexus, literary magazine
Honorary groups
Department clubs
Religious clubs
Special interest groups
Sports clubs
Leadership programs
Wright Volunteer Program
Peer 2 Peer Wellness Education

Academic Competitions

In addition to club and organizational activities, there are a variety of opportunities at Wright State for students to engage in academic competitions.

Model United Nations

WSU delegations to the annual National Collegiate Model U.N. Conference in New York City have the longest winning tradition of any U.S. university in the competition. Selected WSU students enroll in a political science seminar during winter quarter.

College of Engineering and Computer Science

The college Design Clinics offer student teams the opportunity to work on real-world, industry-sponsored projects or problems. The WSU Raider Lightning Electric Race Car provides invaluable hands-on research and development experience for undergraduate students who work as part of the race team in real-world competitions. Through the Engineering Leadership Institute Seminars, selected outstanding students who have demonstrated academic achievement, leadership skills, and personal commitment are provided with the opportunity to have candid dialogues with the area’s top technical and community leaders.

College of Business and Administration

The College of Business and Administration sends students to an annual management accounting case competition sponsored by the Institute of Management Accountants.

Computer Science and Engineering

The Department of Computer Science and Engineering supports active student chapters of the IEEE Computer Society and the Association for Computing Machinery, which competes in the annual ACM Scholastic Programming Contest.

Chemistry

WSU’s Chemistry Club competes in the American Chemical Society’s national recognition of club activities.
The process for becoming a new student at Wright State University involves several important steps. This section describes and explains these steps so that students can understand and follow the process and make informed decisions about services that might help in making decisions. A summary of services and offices discussed in this section is provided on page 41, along with phone numbers, to answer further questions.

Steps for Students New to Wright State:
1. Apply for admission
2. Inquire about financial aid, if needed
3. Attend orientation program
4. Take placement tests
5. Meet with an advisor
6. Register for classes
7. Pay quarterly fees
8. Seek academic assistance

When students are admitted into an academic unit—be it University College, the Office of Adult and Transfer Services, an academic department, a college, or a school—they are advised by a professional advisor or faculty member in that academic unit. Specific information about advising will be provided in the student’s letter of admission.

Admission

Ohio students who have graduated from a state chartered high school and completed the recommended college preparatory curriculum are eligible to apply for unconditional admission. Out-of-state students, however, must present evidence of above average ability to do college work. Students who do not meet the above criteria will be reviewed on an individual basis. Based upon the review of a completed admission file, the applicant may be offered unconditional or conditional admission to the university. Some applicants who do not meet the requirements may have their admission deferred pending satisfactory completion of developmental or remedial courses.

Admission to the university does not automatically guarantee admission to a major program of study; major programs of study have specific entrance requirements that must be met.

High School Preparation

Wright State has adopted a college preparatory curriculum policy. The university requires applicants to have a high school record that meets the recommendations of the Advisory Commission on Articulation between Secondary Education and Ohio Colleges. Students who do not meet the high school course requirements may be admitted to the university with conditions and will be required to remove deficiencies before they can graduate from Wright State University.

The following table summarizes the college preparatory course requirements and indicates how deficiencies may be removed.

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Requirement</th>
<th>Removal of Deficiencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>English—four units</td>
<td>Pass ENG 101*</td>
<td></td>
</tr>
<tr>
<td>Mathematics—three units (including Algebra I and II)†</td>
<td>Pass MTH 127*</td>
<td></td>
</tr>
<tr>
<td>Social Sciences—three units (including two units in history)</td>
<td>Complete the general education requirements in Western Civilization; A one-term course removes up to one unit of deficiency.</td>
<td></td>
</tr>
<tr>
<td>Science—three units</td>
<td>Complete the general education requirements in natural sciences; A one-term lecture/lab course removes up to one unit of deficiency.</td>
<td></td>
</tr>
<tr>
<td>Foreign Language—two units (in the same foreign or classical language through level II)†</td>
<td>Pass courses through the 103 level or demonstrate proficiency by examination.</td>
<td></td>
</tr>
<tr>
<td>Arts—one unit</td>
<td>Complete the general education requirements in Fine and Performing Arts.</td>
<td></td>
</tr>
</tbody>
</table>

* Initial enrollment in English and mathematics courses will be determined by placement testing. See the section on Placement Testing on page 35.
† Algebra I and Foreign Language I may be taken in eighth grade.

Degree-Seeking Students

Beginning Freshmen

Students beginning college with the intention of earning a degree must submit the following to be considered for admission:
1. Undergraduate application
2. $30 nonrefundable application fee
3. High school transcript (partial one at time of application, final one at end of senior year) or official GED scores.
4. College Preparatory Curriculum Completion Form
5. Official ACT or SAT scores.

Transfer Students

Students who have registered for 12 or more quarter hours at another college are considered transfer students. To be considered for admission as a transfer student, students must submit the following:
1. Undergraduate application
2. $30 nonrefundable application fee
3. Official transcript from each college previously attended
4. High school transcript (required of the following students)
   - High school graduates of 1986 or before who are transferring with less than 12 quarter (9 semester) hours
   - High school graduates of 1987 or after who are transferring with less than 45 quarter (30 semester) hours
5. College Preparatory Curriculum Completion Form (required of the following students)
   - High school graduates of 1995 or after who are transferring with less than 45 quarter (30 semester) hours

All transfer students with at least a C average are eligible for admission to the university; admission to most colleges and schools requires a higher GPA. Students who have been out of college for more than five years with less than a 2.0 GPA do not have to petition to transfer to Wright State. However, those students who have attended college within the past five years with less than a 2.0 GPA must petition for admission. The petition forms are available in the Office of Undergraduate Admissions and must be submitted along with the other necessary applications materials outlined above. Students who have been dismissed from another institution will not be considered for admission to Wright State for one calendar year.

Transfer Credit Regulations

1. Students’ credits must have been earned at an institution that is regionally accredited, or an institution of equivalent quality (as determined by Wright State).
2. Students 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 10 years before a student’s admission to Wright State, the student’s advisor will determine if the credits are still applicable to the degree.
6. Students who have completed three-fourths or more of the Wright State quarterly credit hour requirement for a course or sequence may receive credit for that course or sequence. For example, two 3-credit hour courses in English composition may be considered the equivalent of ENG 101 and 102 (8 credit hours).
7. Wright State academic advisors will determine how students’ transfer credits are to be used toward the requirements for their major. If there are exceptions to the transfer credit rules, the dean of the major college or school involved will make the decision.
8. The Office of Undergraduate Admissions will notify students of their admission to Adult and Transfer Services, University College’s Academic Advising Center, or the appropriate college.
9. General education requirements for most transfer students will be determined by a course-by-course evaluation.
10. The university will accept a minimum of 90 credit hours for an associate degree from a regionally accredited junior or community college (see Transfer Credit Regulation number 1). Also, credit is usually given for all academic college credit hours above 90 for which a grade of C or better has been earned.
11. Students who have already received a baccalaureate degree from an accredited institution (see Transfer Credit Regulation number 1) and wish to pursue a second baccalaureate degree will automatically receive 138 quarter credit hours. They will be ranked as seniors. An advisor will determine how many credits these students will have to complete to receive their 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.
13. Transfer students with a minimum GPA of 3.4 or higher may be eligible to graduate with Latin honors (summa cum laude, magna cum laude, or cum laude). For the purpose of determining honors, the student’s GPA at Wright State will
be recalculated to include all transfer grades. This recalculation of the GPA may result in the loss of honors status at graduation.

Transfer to an Ohio Public College or University

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

The Ohio Board of Regents' Transfer and Articulation Policy established the Transfer Module, which is a subset or entire set of a college or university's general education program. The Transfer Module consists of 54 to 60 quarter hours (or 36 to 40 semester hours) of courses in the following areas: English, mathematics, arts and humanities, social and behavioral sciences, natural and physical sciences, and interdisciplinary study.

The Transfer Module completed at one college or university will automatically meet the requirements of the Transfer Module at another college or university. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. For example, a student who completes the Transfer Module at Sinclair Community College and then transfers to Wright State University is said to have completed the Transfer Module portion of the university's general education program and will only need to complete one non-Western studies course to complete the general education requirements at Wright State.

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

Conditions for Transfer Admission

Students meeting the requirements of the Transfer Module are subject to the following conditions:

1. The policy encourages receiving institutions to give preferential consideration for admission to students who complete the Transfer Module and either the Associate of Arts or Associate of Science degrees. These students will be able to transfer all courses in which they received a passing grade of D or better. Students must have an overall GPA of 2.0 to be given credit for the Transfer Module.

2. The policy also encourages receiving institution to give preferential consideration for admission to students who complete the Transfer Module with a grade of C or better in each course and 90 quarter hours or 60 semester hours. Students must have an overall GPA of 2.0 to be given credit for the Transfer Module, and only courses in which a C or better has been earned will transfer.

3. The policy encourages receiving institutions to admit on a nonpreferential consideration basis students who complete the Transfer Module with a grade of C or better in each course and less than 90 quarter hours or 60 semester hours. These students will be able to transfer all courses in which they received a grade of C or better.

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

Appeals Process

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

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

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

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

Wright State University’s Transfer Module

Wright State’s Transfer Module consists of 54 credit hours of introductory courses in English, mathematics, arts and humanities, social and behavioral sciences, and natural and physical sciences. The general education requirements for a bachelor’s degree require 57 credit hours, which include the Transfer Module and one additional course as listed below. Since certain majors at Wright State require approved course or sequence substitutions to the courses listed below, students should consult the specific degree requirements listed in this catalog.

<table>
<thead>
<tr>
<th>Transfer Module</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
</tr>
<tr>
<td><strong>Composition</strong></td>
</tr>
<tr>
<td>8 credits</td>
</tr>
<tr>
<td>ENG 101-4</td>
</tr>
<tr>
<td>ENG 102-4</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
</tr>
<tr>
<td>3 credits</td>
</tr>
<tr>
<td>MTH 145-3*</td>
</tr>
<tr>
<td><strong>Arts/ Humanities</strong></td>
</tr>
<tr>
<td>15 credits</td>
</tr>
<tr>
<td>HST 101-3</td>
</tr>
<tr>
<td>HST 102-3</td>
</tr>
<tr>
<td>HST 103-3</td>
</tr>
<tr>
<td>Choose one:</td>
</tr>
<tr>
<td>ENG 204-3</td>
</tr>
<tr>
<td>PHL 204-3</td>
</tr>
<tr>
<td>REL 204-3</td>
</tr>
<tr>
<td><strong>Social and Behavioral Science</strong></td>
</tr>
<tr>
<td>16 credits</td>
</tr>
<tr>
<td>SOC 200-3</td>
</tr>
<tr>
<td>PLS 200-3</td>
</tr>
<tr>
<td>EC 200-3</td>
</tr>
<tr>
<td>Choose one:</td>
</tr>
<tr>
<td>RST 260-3</td>
</tr>
<tr>
<td>RST 270-3</td>
</tr>
<tr>
<td>RST 280-3</td>
</tr>
<tr>
<td>RST 290-3</td>
</tr>
<tr>
<td><strong>Natural and Physical Science</strong></td>
</tr>
<tr>
<td>12 credits</td>
</tr>
<tr>
<td>Choose three courses</td>
</tr>
<tr>
<td>BIO 105-4, 106-4, 107-4</td>
</tr>
<tr>
<td>CHM 105-4, 106-4, 107-4</td>
</tr>
<tr>
<td>GL.105-3/115-1, 106-3/116-1, 107-4</td>
</tr>
<tr>
<td><strong>To Complete General Education Requirements</strong></td>
</tr>
<tr>
<td>Choose one:</td>
</tr>
<tr>
<td>CST 220-3</td>
</tr>
<tr>
<td>CST 230-3</td>
</tr>
<tr>
<td>CST 240-3</td>
</tr>
<tr>
<td>CST 250-3</td>
</tr>
<tr>
<td>CSE 250-3</td>
</tr>
</tbody>
</table>

* Approved sequence substitution available; see the section on General Education Requirements on pages 51–55.
International Students

Wright State welcomes applications from qualified international applicants. Over 400 students on F-1 and J-1 student visas currently attend the university. Application materials are available at the University Center for International Education. Applications for admission must be completed three months before the quarter in which applicants wish to begin studies at Wright State. 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.

2. All international applicants must demonstrate proficiency in English. For applicants whose 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. The College of Engineering and Computer Science requires a score of 530. Non-native English-speaking students will also be tested in English upon arrival at Wright State and are required to enroll in appropriate English courses if the testing so indicates.

3. Since there is no financial assistance available for undergraduate international students, the university must be assured that all international applicants have adequate financial resources to attend Wright State. International students, once admitted, may be required to deposit with the university a full year’s tuition before they will be sent a student visa form.

4. Transfer students must also present evidence of above-average ability to do college work. All first-year international students are required to take the reading, writing, and mathematics placement examinations before enrolling for their first quarter of classes. Students should contact the University College for further placement testing information.

Returning Students

Students who have not attended Wright State for four or more consecutive quarters must apply for readmission through the Office of Undergraduate Admissions. There is no additional application fee, and official transcripts are required only from the schools students have attended since they left Wright State.

Students who have been dismissed may apply for readmission by petition after they have remained out of school for four quarters; see the section on readmission on page 48.

Students who have not attended Wright State for five years (20 consecutive quarters) may wish to take advantage of the Fresh Start Rule. This rule may allow students to have their earlier GPA recalculated. Interested students should contact the Office of Undergraduate Admissions for more information.

Other Admission and Enrollment Categories

Nondegree Undergraduate Students

Students who wish to take courses at Wright State, but who do not intend to work toward a degree at this time can register as nondegree students. Students may take as many courses as they like, as long as they meet the requirements for each course. To be eligible to register as nondegree students, they must have graduated from an accredited high school or passed a high school equivalency test (GED).

To apply, students need only fill out a simple application/registration form and pay a $10 one-time registration fee. Later, if they decide to enter a degree program, they can file their credentials and pay an additional $20 application fee. Non-degree work normally can be applied toward a degree program.

Nondegree students may receive academic advising from the Academic Advising Center and may participate in any of the services of the division including tutoring and developmental education courses.

Teacher Certification Candidates

College graduates who wish to become licensed teachers must apply for admission, file all the necessary credentials, pay the application fee, and complete the college admissions process as described on page 83. Those interested in certification/licensure should also see the Special Program Note on page 82.

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

High School Students

High school students may, in some circumstances, take courses at Wright State while still enrolled in high school. For specific information about the program, contact the Office of Undergraduate Admissions.
Orientation

The new student orientation program at Wright State is designed to help students make a successful transition to university life. Four major orientation programs are held each year to meet the varying needs of the student population. All first-year students under the age of 23 with no previous college experience attend a comprehensive program in June and July to prepare them for fall quarter. These students receive information in early May describing the summer program and outlining the orientation dates. Students have the opportunity to choose the session they wish to attend.

During orientation, students are introduced to the university and learn about its resources. Students complete placement testing, receive academic advising, and register for fall quarter as part of the orientation process. They also meet other students, experience university life, and discuss contemporary campus issues relating to student life, including multiculturalism and diversity. Ninety percent of first-year students attend summer orientation. A concurrent parent session is conducted with each orientation to acquaint parents with campus life. The Wright State University Parents' Association assists with these parent orientations, giving participants the opportunity to network with other parents.

Before the beginning of fall quarter, a separate orientation program is held for students 23 years of age and older. Students participating in this half-day session meet other students; learn more about university resources; discuss contemporary campus issues; and share ideas on how to balance work, family, and school.

Transfer students under the age of 23 and those students who are admitted after the summer orientation can attend a one-day program immediately before fall quarter begins. This fall program is similar to the summer orientation, but does not include placement testing or registration. Additional sessions are held for all new students immediately before winter and spring quarters to assist them with the successful transition to university life.

Placement Testing

New students must complete appropriate testing before scheduling an academic advising appointment to prepare for course registration. (Note: Students under the age of 23 who attend summer orientation will undergo testing and registration as part of the summer orientation process.) Directions for academic advising and registration will be given at the placement testing session. The University College conducts placement testing in mathematics, reading, and writing for undergraduate students who are new to the university.

Mathematics Placement Testing

All students (new, transfer, and continuing), without credit for a college math course completed within one calendar year, are required to take the math placement test. Appropriate course enrollment is then determined based on these scores. Math test scores are valid for one year from the time the test is taken.

Retesting is required for continuing students who do not pass a math course within a calendar year.

Transfer students who have earned college credit in mathematics at a grade of C or above within the past year do not need to take the exam. In addition, students transferring from Clark State, Edison State, or Sinclair Community College who have completed all required developmental mathematics courses within the past 12 months need not take the math placement exam.

Reading and Writing Placement Testing

All students preparing for their first English composition course in higher education are also required to take reading and writing placement examinations.

Transfer students who have earned college credit in English composition at a grade of C or above need not take the writing exam. In addition, transfer students from Clark State, Edison State, and Sinclair Community College who have satisfactorily completed all required developmental reading and writing courses need not take the exams.

Writing—Students enter Wright State with very different abilities in English. To give every student the best possible instruction in writing, several courses have been developed, ranging from Honors sections of English 101 to DEV 072, 082, and 092, which are additive credit courses for students needing more extensive instruction in writing than the two-quarter ENG 101/102 sequence can provide. The placement procedure (the development of an essay) exists so that students can be given the instruction most appropriate for their writing abilities upon entering the university.

Reading—In order to meet the reading demands of the general education curriculum, it is imperative that students be given an opportunity to remove deficiencies in their skills. Courses have been developed—DEV 071, 081, 091—to give every student the best possible instruction in reading. The placement procedure exists to give students the instruction most appropriate for their reading abilities upon entering the university.

For more information about placement testing, students should contact the University College.
Advising

Academic advisors help students select courses, schedule classes, become oriented to the university, and develop academic success strategies. During advising, students are given information about appropriate academic services, such as tutoring or Developmental Education courses, and referrals to offices that provide specialized support, such as for disabled students, Honors students, or students age 25 or older. In addition, University College’s Academic Advising Center and Adult and Transfer Services advisors help degree-seeking students focus on their university general education requirements and fulfill the admission requirements of their selected majors. Once admitted to their colleges, students are supported by college and department advisors.

New Students Enrolling for Fall Quarter

New Student Orientation Program

First-year students under the age of 23 with no previous college experience who are enrolling for fall quarter attend the New Student Orientation Program, which helps students make a successful transition to college life. During orientation, students take placement tests, receive academic advising from an advisor in the University College Academic Advising Center, and register for fall classes. The program is held in June and July on campus, and students may stay overnight in university housing. Orientation includes sessions concerning various aspects of college life.

New Student Group Advising

Students who do not attend the New Student Orientation Program will visit campus twice, once to take their placement tests, and a second time for New Student Group Advising in August or early September (exceptions can be made for those living a great distance from campus). During the two- to three-hour group advising session, students will receive academic information from a University College Academic Advising Center advisor and register for their fall classes. Group advising students are invited to attend a one-day orientation program in September before classes begin.

New Students Enrolling for Other Quarters

All new students beginning winter, spring, or summer quarters will follow the procedures outlined under New Student Group Advising as stated above; take placement tests one day and then return later for group advising and registration, with an optional orientation program available before the quarter begins.

Adult and Transfer Students

The Office of Adult and Transfer Services provides a starting place for those 25 and older who are beginning or reentering college and for students transferring into Wright State University. The office’s services introduce students to the university system and provide information, support, and referral resources.

Adult and Transfer Services staff assist students age 25 or older who are returning to the university to complete a degree, begin a degree, or plan a career change. The services include academic and career exploration, referral to university and community services, and support in managing change.

Transfer students follow the procedures of the academic unit to which they are assigned upon admission to the university. Students who have a declared major, and have already met the admission requirements to enter the school or college that houses that major, will meet with their faculty or staff advisor after completing any required placement tests.

Transfer students who are undecided, or who have not yet met the admission requirements for their majors, are assigned to the University College Academic Advising Center or to the Office of Adult and Transfer Services. In either case, after placement tests (if required), transfer students meet with their assigned advisors for academic information in preparation for registration.

Financial Aid

The Office of Financial Aid makes every effort to help students who would be unable to attend school without receiving some form of financial aid. No student interested in attending Wright State University should fail to apply because of financial limitations. If necessary, students should meet with a financial aid staff member to discuss any questions or concerns they may have regarding a financial aid package.

Financial aid, with the exception of four-year scholarships, is granted on a three-quarter basis (summer financial aid requires completion of a separate summer financial aid application). All students must apply for financial aid on a yearly basis. All students who are interested in applying for need-based financial aid are required to submit the Free Application for Federal Student Aid (FAFSA), and a Wright State University financial
aid application. The FAFSA form can also be filed electronically using FAFSA on the web or FAFSA Express.

FAFSA on the web is currently available through the Office of Financial Aid. FAFSA on the web allows students to file the FAFSA via the internet at the following address: http://www.fafsa.ed.gov/. Another way to electronically file the FAFSA is by requesting FAFSA Express diskette software by contacting FAFSA Express Customer Service at 1-800-801-0576. The software can also be downloaded from the following Internet address: http://www.ed.gov/money.html. Students must have a PC and modem for home use for FAFSA on the web or FAFSA Express.

Application deadlines for the following programs vary, so it is essential that individuals contact the Office of Financial Aid for specific dates and additional details.

**Scholarships**

Scholarships are a form of gift aid that do not require repayment. They may be based on academic excellence and/or financial need. Applications for scholarships supported by local industries, foundations, and agencies should be obtained directly from those organizations.

**Scholarships for Incoming and Transfer Students**

Wright State has developed a scholarship program that recognizes students' academic accomplishments, involvement in extracurricular activities, and creative talent. Transfer scholarships and incoming student scholarships are renewable as long as the recipient maintains a 3.0 cumulative GPA and earns 45 hours of credit per academic year.

Incoming and transfer scholarship applications are available through the Office of Admissions at Wright State University, the counseling office of any area high school, or the Office of Financial Aid at Wright State. To be considered for scholarships based on financial need and merit, students must complete the Wright State University Financial Aid Application and the Free Application for Federal Student Aid (FAFSA) by March 1. The majority of scholarships offered by Wright State are based on merit, not financial need.

To be considered for an honors or competitive scholarship, students must apply for admissions and return the completed scholarship application to the Office of Financial Aid by January 15. The applications for academic performance scholarships is through the Admissions application. Transfer students must submit an application form by March 1 to be considered for scholarships.

Students of Wright State can also access information about outside scholarships through the internet. The web address to locate the scholarship data is: http://www.studentseervices.com/fastWEB/.

**Scholarships for Continuing Undergraduate Students**

Continuing students who have demonstrated strong academic achievement at Wright State may apply for scholarships supported by the Wright State University Foundation and the Campus Scholarship Campaign. Applicants compete for these scholarships with other scholarship applicants who are enrolled in their own college, department, or professional school, and are selected by a committee composed of faculty members in their college, department, or professional school. Scholarships range from $300 to $3,000 and are awarded for one year.

Continuing undergraduate students must return their scholarship applications to the Office of Financial Aid by March 1. Applications for continuing undergraduate scholarships are available through the Office of Financial Aid at Wright State in January.

**Named Scholarships**

For specific information about any of the following scholarships, contact the Assistant Director for Scholarships and Outreach in the Office of Financial Aid.

**College of Business and Administration**

American Business Club
Bank One Grant
James W. Blain Accountancy Scholarship
Business Alumni Scholarship
Dayton Advertising Club Scholarship
Dean Investment Scholarship
Deloitte & Touche LLP Scholarship
IAFP Scholarship
The Thomas E. Kreusch Scholarship
The Howard L. Magner Accountancy Scholarship
The JoAnn Self Memorial Scholarship
The Lofino Scholarship
The Donald F. Pabst Scholarship
Jacob P. Paperman Award
Scitex Scholarship
Shumsky Enterprises Scholarship
The Barbara Kirk Stickney Scholarship
The Sharon K. Sutton Scholarship
Robbins & Myers Scholarship
Rust/Cheri Gray Memorial Fund
WSU Finance Club Scholarship
College of Education and Human Services
Department of Teacher Education Scholarship
The David M. Berry Memorial Endowed Scholarship
The Betty Hathaway Scholarship
Haverstock Scholarship
The Ellen Scherer Scholarship
The Lois F. Renner Lucero Memorial Scholarship
Dayton Association of Orthopedic Nurses Scholarship
The Howard E. Bales Scholarship

College of Engineering and Computer Science
The Adams-Robinson Construction Company Endowed Scholarship (Wright STEPP)
The Amcast Industrial Engineering Scholarship
The Association for Unmanned Vehicle Systems Scholarship
Kittyhawk/Dan Graves Scholarship
The John A. Becker Electric Company Scholarship
Northrop Grumman Scholarship
The Anthony J Cacioppo Ph.D. Memorial Scholarship
The Lester and Delilah Buechler Scholarship
Dayton/Wright AFCEA Scholarship
The Duriron Foundation Scholarship (Wright STEPP)
The EG&G Student Fellows Program
Electrical Manufacturing and Coil Winding Association, Inc. Scholarship
Lockheed Scholarship
The Modern Industrial Plastics Mechanical & Materials Engineering Scholarship
NAECON Scholarship
The Harry W. Moore Memorial Scholarship
The Heinz P. Murka Scholarship
The Ohio Electronic Engravers Scholarship
Robbins & Myers Scholarship
The Standard Register Scholarship (Wright STEPP)
The William F. Wahler Foundation
The Charles F. and Dorothy E. Wittlinger/Dayton View Optimist Club Endowed Scholarship
The Mosier Scholarship

College of Liberal Arts
Communications Alumni Scholarship
The Ellen Wiedemann-Bergen Memorial Award
The Paul Katz Chamber Orchestra Scholarship
The Chuck and Patty Corley Memorial Scholarship
WTUE Scholarship
The Gary M. McDaniel Memorial Scholarship
Cheryl Craigie and John Britt Endowed Scholarship
The Richard J. Blazer Memorial Scholarship
The Sonia Goldfarb Scholarship
The Gerald and Rita Kurdilla Scholarship

College of Science and Mathematics
The Dr. Merrill L. Andrews Memorial Scholarship
The Michael A. Bruck Memorial Scholarship
The Robert G. Chollar Memorial Scholarship
The Cargill Chemistry Scholarships
Dow Chemical Scholarship
The Edgar Hardy Ph.D. Chemistry Scholarship
Kittyhawk Scholarship
The Michael J. Bruck Memorial Scholarship
The Ervin B. Lacy II Memorial Scholarship
The Harold W. Livingston Memorial Scholarship
Ohio Wildlife Federation and League of Ohio Sportsmen
The Gerald A. Kurdilla Scholarship
Dr. Jean T. and Phyllis Nussey Dubois Memorial Scholarship

College of Nursing and Health
The Elta Smith Biles Memorial Scholarship Fund
Montgomery County Medical Society Auxiliary Scholarships
The Sondra K. Zinser Nursing Scholarship
The Ellen Scherer Scholarship
The Lois F. Renner Lucero Memorial Scholarship
Dayton Association of Orthopedic Nurses Scholarship
The Howard E. Bales Scholarship

Athletic Scholarships
Heider/Best Memorial Scholarship
The Peggy Wynkoop Scholarship
Dan Byrnes Wheelchair Scholarship
The Gregg Nischwitz Scholarship

Miscellaneous Scholarships
Alumni Scholarships
The Allen Jones Scholarship
The Justin Beason Memorial Scholarship
Beta Phi Omega Scholarship
Centerville Women's Civic Club Scholarship
CSC-Joseph Choa Memorial Scholarship
The Michael Emrich Scholarship Fund
The Susan/Jerome Fetisko Scholarship
Fairborn Lioness Club Scholarship
The Charles H. Hewitt Scholarships
Iddings Benevolent Trust Scholarships
The George W. Lucas Scholarship
The Eva Kmetec Book Fund Scholarship
The Elenore Koch Scholarship
The Dwight Kemp Scholarship
The Mazer Family Foundation Scholarship
The Capt. Kevin M. McGuire Memorial Scholarship
The Robert Oelman Scholarship
Rike Family Foundation Scholarships
The Frank J. Saltsburg Scholarship
The Truman O. Schardt Memorial Scholarship
The Oma K. Sells Scholarships
The Daisy A. Shellhouse Scholarship
The Michael Small Memorial Scholarship
University Trustees Scholarship
Volkswasing Scholarship
Western Ohio Pizza Scholarship
The Frederick A. White Scholarship
Woods Scholarship
WOW Scholarship
WSU Foundation Scholarships

Grants

Grants are forms of gift aid that 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. Students who are eligible for the Ohio Instructional Grant, but will be attending part time, will receive their eligibility through the Ohio Part-time Student Instructional Grant program. Students must apply through the Free Application for Federal Student Aid (FAFSA).

To be considered for the Pell Grant and the Supplemental Educational Opportunity Grant, students must submit a Wright State University Financial Aid Application and a Free Application for Federal Student Aid (FAFSA).

Priority Consideration

To receive priority consideration for the Federal Supplemental Grant, Perkins Loan, Nursing Loan, and/or Work-Study, students must demonstrate exceptional financial need on the basis of the Free Application for Federal Student Aid (FAFSA). The FAFSA is first mailed to the Federal Processing Center on or before March 1 with Wright State listed to receive the processed data. Also, the Wright State Financial Aid Application must be received by the Office of Financial Aid by March 1.

Loans

Loans, which are repaid starting six months or nine months after graduation or termination of half-time (six hours) studies, are available to both undergraduate and graduate students. For information on applying for the low interest (5 percent) Perkins Loan (formerly the National Direct Student Loan), refer to the paragraph on priority consideration.

Students apply for the Subsidized and Unsubsidized Stafford Student Loan (variable interest) by completing the Free Application for Federal Student Aid (FAFSA) and the Wright State University Financial Aid Application.

Students who are officially admitted to the Wright State-Miami Valley College of Nursing and Health are eligible to apply for the Federal Nursing Student Loan. The Federal Nursing Student Loan has a 5 percent interest rate, and repayment begins nine months after graduation or termination of half-time (six hours) nursing studies. For information on applying for the Federal Nursing Student Loan, refer to the paragraph on priority consideration.

Student Employment

Student employment is available to students who wish to work to help finance their education or just to earn extra spending money. Students can obtain information about job opportunities through Career Services. For on-campus jobs, students may be employed through the Federal Work-Study Program or the regular employment program. For information on applying for Federal Work-Study, refer to the paragraph on priority consideration. There are no financial eligibility requirements for students who wish to work under the regular employment program. Students may also be employed off-campus.

Veterans' Benefits

Active duty personnel and Vietnam-era veterans are eligible for the new G.I. Bill if they served without a break in service after October 19, 1984, through June 30, 1985. Only veterans separating after June 30, 1988, are eligible.

The Veterans' Educational Assistance Program (VEAP) can be used by a veteran who entered active military service after December 31, 1976, served for a continuous period of 181 days or more, and contributed to VEAP while on active duty.

The All-Volunteer Force Educational Assistance Program (New G.I. Bill) can be used by a veteran who entered on active duty at any time after June 30, 1985, and paid into the program.

Applications are available from the Veterans Affairs office at Wright State University or from any Department of Veteran Affairs office. Educational opportunities are available for children and surviving spouses of veterans whose deaths or permanent total disabilities were service-connected. Spouses and children of servicemen and women declared missing in action or prisoners of war are also eligible.

Tutorial assistance is available to students who are receiving education benefits. Assistance is given to vocational rehabilitation students according to need, while benefits are limited to a maximum of $100 per month for other students.
Registration

After new students have met with their advisor, they are ready to register for classes. Registration information and dates are announced in the quarterly schedule of classes and online at http://www.wright.edu/admissions/registration/. Once students have advisor approval (if required), they may register through the Raider Express Telephone Registration system using a touch-tone phone or in person at the windows of the Office of the Registrar. Continuing students should check the quarterly class schedule for the specific date they may begin to register.

Currently registered students and students who are not currently registered, but who have been registered anytime during the previous year, will be mailed a registration information form. This form will be mailed to the local address on file in the student database.

Registration for Writing Intensive (WI) Courses

As explained on pages 44 and 50, students must complete eight writing intensive (WI) courses as part of the WAC requirement. Each WI course is clearly identified in the quarterly class schedule. Students registering for a WI course are automatically registered for the writing component of the course, a “0” credit hour lab. Students may not drop a WI course and lab separately.

Academic Assistance Services

Developmental Education

The office of Developmental Education offers study skills courses in reading improvement, critical reading, basic writing, fundamental English, and basic mathematics. Appropriate placement into nearly all of these skill-building courses is determined by the scores obtained from the university-administered placement tests. Also offered are study strategies for students who need improvement in these areas before taking college-level courses. Students taking basic writing and fundamental English or reading improvement courses are scheduled to spend at least one hour per week in the writing and reading centers.

In addition to reading, writing, and basic math, students are encouraged to enroll in College Study Strategies and the First-Year Student Seminar. One nongraduation credit hour is earned for the strategies course and two hours of graduation credit for the seminar. For each of the other study skills courses, three to six hours of nongraduation credit can be earned.

Tutoring Services

The Tutoring Office strives to locate a tutor for any course offered at the university in which a student may be experiencing difficulty. Students can sign up for tutoring not only to pass a course, but also to improve their grade in a course. Initial application for placement with a tutor should be made in person at the Tutoring Office. Veterans and students supported by the Bureau of Vocational Rehabilitation may be able to be reimbursed for their tutoring expenses. The office will also direct students to “help rooms” provided by various departments, where walk-in tutoring is available.

The Tutoring Office also coordinates a Supplemental Instruction Program in conjunction with specific General Education classes. For classes with a Supplemental Instruction component, student can attend free weekly study sessions. Information on which specific classes offer Supplemental Instruction can be obtained from the Academic Advising Center or the Tutoring Office.

Paying Fees

Students will find fee payment information and deadlines in the quarterly class schedule. A current fee schedule can be found online at http://www.wright.edu/admissions/bursar/. Students who register before a quarter begins, but do not pay the fees by the required due date, may have their registration cancelled in order to make classroom space available to other students. Mailed payments received after the deadline will be returned.

Registrations will not be cancelled for students who register after a quarter begins but do not pay their fees on time. These students will be responsible for payment of fees and are subject to deadline dates for dropping and adding classes as stated in the quarterly class schedule.
Writing Assistance

The University Writing Center provides free writing consultation. Undergraduate and graduate students are available to help students with every stage of the writing process and with assignments across the curriculum. Students may also receive help using one of the center's 13 networked computers.

The Writing Center offers individual and group workshops each quarter. These specialized workshops offer review of grammar and punctuation, research formats, and essay exam preparation. The center also maintains a Writer's Hotline for students and staff.

Learning English for Academic and Professional Purposes (LEAP)

For non-native speakers of English wishing to study at an American college or university, Wright State offers the Learning English for Academic and Professional Purposes (LEAP) Intensive English Program.

Benefits of the LEAP Program include 10 weeks of instruction in small classes that allow for individual attention. The instruction includes intensive speaking, listening, reading, writing, grammar, and the latest computer technology, including Web browsing and e-mail. Students are instructed by experienced faculty with advanced degrees in teaching English as a second language or a related field, and by adjunct instructors closely supervised by more experienced faculty. The LEAP Program also features regular meetings with native English-speaking conversation partners and scheduled sessions with trained tutors in the University Writing Center.

Holders of F-1 visas must be enrolled full-time in the LEAP Program, although a part-time course of studies is available for immigrants and visitors. The LEAP Program is not subject to WSU tuition or fee waivers. For more information, please call (937) 775-2505 or e-mail richard.johns@wright.edu.

Summary of Services and Office Phone Numbers

| Admission Information: Office of Undergraduate Admissions, 775-5700 |
| Financial Aid Information: Office of Financial Aid, 775-5721 |
| Placement Testing dates, locations, exemptions: University College, 775-5771 |
| Advising Appointments: (call student's assigned advising unit) University College, 775-5750; Office of Adult and Transfer Services, 775-5777; for College or School, see listing on inside front cover |
| Course, Registration, and Refund Information: Office of the Registrar, 775-5588, and Raider Express Telephone Registration, 775-4400 |
| Fee Payments: Office of the Bursar, 775-5650 |
| Academic Support — for individual or group help: Tutoring Services, 775-2280; Writing Center, 775-4186 — for courses in study skills and/or fundamental math, reading, and writing: Developmental Education, 775-5770 — for disabled students adapting to college: Office of Disability Services, 775-5680 — for students age 25 or older returning to school: Office of Adult and Transfer Services, 775-5777 — for intensive English instruction for non-native speakers of English: LEAP Program, 775-2505 |
ACADEMIC STANDARDS
AND REQUIREMENTS
Requirements for a Bachelor’s Degree

To graduate with a bachelor’s degree from Wright State University, all students must fulfill the following requirements:

Credit Hours—A minimum of 183 credit hours must be earned in approved courses.

Grade Point Average—At least a minimum cumulative GPA of 2.0 must be earned for courses taken at Wright State University.

General Education—The university’s general education requirements, as explained on pages 50-54, must be completed.

Residence Regulations—A minimum of 45 credit hours must be earned at Wright State University. At least 15 of the last 45 hours of credit must be earned at Wright State. A minimum of 30 hours of courses numbered 300 or above must be earned at Wright State.

Students must also fulfill all program requirements set by departments, colleges, and schools, some of which exceed these university minimums; see individual program requirements for details. Advisors in the University College, in Adult and Transfer Services, and in the colleges and schools are available for information and guidance in formulating programs of study.

Responsibility for registering in appropriate classes, scheduling, and fulfilling all university and program requirements for graduation rests with the student.

Students who are continuously enrolled or eligible to enroll continuously (students are eligible to enroll continuously if they are enrolled during any part of the calendar year) may elect to meet either the university requirements that were in effect when they entered Wright State or the university requirements that came into effect while they were continuously enrolled. Students who were not enrolled continuously must meet the university requirements in effect when they are readmitted to the university.

Students must meet the college or school requirements in effect when they are admitted to the college or school, and they must meet the program requirements in effect when they are admitted to a specific program or major. Students who are not enrolled continuously may be required to meet the college, school, or program requirements in effect when they are readmitted to a program. In addition, students who have not completed their program in seven years may have their college, school, or program requirements revised.

Writing Across the Curriculum (WAC)

Students must complete a total of eight WAC courses, six in General Education (GE) and two in the major. Effective fall 1996, this requirement applies to all new students and transfer students and to returning students who were last enrolled at Wright State summer quarter 1995.

Writing Across the Curriculum in General Education

The required General Education WAC courses are ENG 101, ENG 102, and four Writing Intensive (WI) courses from each of the following four categories: (1) EC 200, (2) SOC 200, (3) One of the following Great Books courses: ENG 204, PHI 204, or REL 204; (4) One science course that satisfies the Area Four requirement and is designated as WI.

Writing Across the Curriculum in General Education—Requirements for Transfer Students

Transfer students who have completed the transfer module that is part of the Ohio Articulation and Transfer Policy will be considered as having met the Writing in GE requirements. Transfer students who have completed at least 75 percent (40 hours) of the transfer module may meet the Writing in GE requirement by completing one writing intensive GE course. Transfer students who have completed less than 75 percent (40 hours) of the transfer module must complete the university’s General Education requirements, including the Writing in GE requirement, as follows: students with 50 percent to 74 percent (28–39 hours) of General Education completed must successfully complete two WI courses, in addition to English 101 and 102; those with 25 percent to 49 percent (14–27 hours) of General Education completed must successfully complete three WI courses, in addition to English 101 and 102; and those with less than 25 percent (fewer than 14 hours) of General Education completed must successfully complete all four designated WI courses, in addition to English 101 and 102.

When students who still need writing intensive credit in General Education courses already have credit for the General Education courses designated as writing Intensive at WSU, those students may apply credit from other designated Writing Intensive courses to meet that requirement. Those courses may be in General Education (e.g., a second Writing Intensive science course) or, when available, a third Writing Intensive course in the major. No Writing Intensive course in the major will be counted toward both General Education and writing in the major requirements. Transfer students who do not
Beginning fall 1996, WSU graduates returning to take a second degree must complete at least two WI courses in the new major.

Students pursuing a dual major may have the writing requirements for the second major waived at the discretion of the department or college.

WAC Requirement Substitutions

Students who do not successfully complete the WI portion of four GE courses (excluding ENG 101 and ENG 102) may satisfy the requirements for writing proficiency in GE in any one of the following three ways: (1) pass the WI portion of at least two GE courses and earn a grade of C or better in an approved advanced writing course; (2) pass the WI portion of at least two GE courses and prepare an acceptable portfolio that includes writing on demand; (3) earn a grade of C or better in an approved advanced writing course and prepare an acceptable portfolio that includes writing on demand. Students should consult with their academic advisor to determine the most appropriate means of satisfying this requirement. To fulfill the WI requirements in the major, students may, under rare circumstances, complete an Independent Writing Project or a designated WI independent reading course to fulfill only one of the two-course requirements in the major. This option requires the approval of the department chair and is not available to students for fulfilling the GE requirement.

Second Degrees

Students who hold a baccalaureate degree from an accredited institution, including Wright State, and who wish to earn a second baccalaureate degree at Wright State, must satisfy the requirements of the department and college that houses the second degree. Students earning a second degree must earn at least 45 credit hours beyond the minimum hours required for the first degree. At least the last 45 hours of course work are taken at Wright State, 23 of which must be in courses numbered 300 or above.

Graduating With Latin Honors

Undergraduate students with outstanding academic records are recognized at commencement. Three distinctions are made: summa cum laude (Latin for with highest honors) recognizes a cumulative GPA of at least 3.8; magna cum laude (with high honors) indicates a cumulative GPA of at least 3.6; and cum laude (with honors) indicates a final cumulative GPA of at least 3.4.

Academic honors are based on meeting the minimum honors GPA requirement for work attempted at Wright State University, as well as for all transfer college work attempted, as of the end of the term in which the student graduates (that is, by

Writing Across the Curriculum in General Education—Requirements for Returning Students

Returning students who were last enrolled at Wright State summer quarter 1995 and who have not completed the General Education requirements must complete the Writing in General Education requirements as follows: students with at least 75 percent (40-56 hours) of General Education completed must successfully complete one WI course, in addition to ENG 101 and 102; those with 50 percent to 74 percent (28-39 hours) of General Education completed must successfully complete two WI courses, in addition to ENG 101 and 102; those with 25 percent to 49 percent (14-25 hours) of General Education completed must successfully complete three WI courses, in addition to ENG 101 and 102; and those with less than 25 percent (fewer than 14 hours) of General Education completed must successfully complete all four Writing Intensive courses, in addition to ENG 101 and 102.

When returning students who still need Writing Intensive credit in General Education courses have already taken earlier versions of General Education courses now designated as Writing Intensive, those students may apply credit from other designated Writing Intensive courses to meet that requirement. Those courses may be in General Education (e.g., a second Writing Intensive science course) or, when available, a third Writing Intensive course in the major. No Writing Intensive course in the major will be counted toward both General Education and writing in the major requirements.

Returning students who do not successfully complete the requirements above may satisfy the requirements for writing proficiency in GE by completing the appropriate substitution described below in “WAC Requirement Substitutions.”

Writing Across the Curriculum in the Major

WAC in the major requires students to complete at least two WI courses in their major field. Successful completion of ENG 101 and 102 is a prerequisite for all WI courses in the major. All incoming first-year students, transfer students, and returning students who were last enrolled at Wright State summer quarter 1995 must complete this portion of WAC for their degree requirements.
the day on which term grades are due). In calculating cumulative GPAs for the purpose of graduating with honors, only the first grade earned for a course will be counted. This recalculation of the GPA may result in the loss of honors status at graduation. To be eligible for academic honors at graduation, students must have earned at least 45 credit hours at Wright State University. Contact the Registrar's Office for further information.

Applying for Degrees

Before graduating, students must submit an application for a degree. See the current class schedule for specific deadline dates. Those who do not complete the graduation requirements in time must file another application for a later graduation.

Students who complete their degree requirements during winter or spring quarters participate in the June commencement. Those who complete their degree requirements during summer or fall quarters participate in the December commencement.

Scholastic Policies

Wright State is on the quarter system. The academic year is divided into three quarters (fall, winter, and spring) and a summer session. Classes are assigned values in quarter credit hours. The credit hour is based on 50 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. Students should carefully plan their academic program with an advisor, especially if they are also working while going to school. However, students are responsible for registering in appropriate classes, scheduling, and fulfilling all university and program requirements for graduation.

The minimum full-time undergraduate load is 12 credit hours per quarter with the average between 14 and 17 credit hours.

Students may drop a course or withdraw from the university without grades through the third week of the quarter, or its equivalent. These courses will not be recorded on transcripts. From the fourth through eighth weeks, or their equivalents, freshmen may drop a course or withdraw, but the course and a designation of "W" will appear on their records. All students other than freshmen may drop a course or withdraw from the fourth through the fifth weeks, or their equivalents, but the course and a designation of "W" will appear on their records. (Students should see the quarterly class schedule for the exact drop and withdrawal dates.) After the withdrawal date, students need to successfully petition to drop; otherwise, the course will appear on their records with a grade.

Grading System

Academic achievement is indicated by the following letter grades and points used in calculating GPAs:

- **A** Excellent—4 points per credit hour
- **B** Good—3 points per credit hour
- **C** Satisfactory—2 points per credit hour
- **D** Poor—1 point per credit hour
- **F** Failed—0 points per credit hour

A student's GPA at Wright State is obtained by dividing the number of points the student has earned at Wright State by the total number of hours the student has attempted, excluding the following symbols, which appear on student records but are not used in computing GPAs:

- **L** Audit—given only if arranged when the student registers
- **N** No report—the instructor did not report a grade
- **P** Passing—indicates work of C quality or better; given only for specifically approved courses
- **M** Satisfactory progress on a project—final grade assigned upon completion of the project
- **U** Unsatisfactory performance
- **I** Incomplete—given only when part of the required work is missing and arrangements have been made with the instructor to complete the work. The instructor must submit an incomplete grade contract at the time the grade sheet is submitted to the Office of the Registrar. If the work is not completed by the end of the following quarter, or earlier if required by the instructor, the I grade automatically is converted to an F and the grade point is 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 if the instructor does not indicate an earlier date on the incomplete grade contract.
- **W** Withdraw—given for courses from which the student officially withdrew, that the student dropped during the fourth through eighth week of classes or equivalent, or for which the student successfully petitioned for withdrawal. Grade reports are sent at the end of each quarter to the addresses on file in the registrar's office. Students who notice any discrepancy on their report should contact the Office of the Registrar within 30 days.
Grades for Writing Intensive Courses in Writing Across the Curriculum

To receive WI credit, students must complete the writing component of the course with a grade of C or better. Writing intensive grades are entered separately from course grades on students' transcripts as "P" (pass) or no entry. For students passing the writing component of the course, both the grades for the course and the WI component will appear on the transcript and permanent record. If a student fails the writing component, only a grade for the course will appear.

Students may pass both components of the WI course, pass the course but fail the writing component, or pass the writing component but fail the course itself. A student who passes the writing component but fails the course may receive credit for fulfilling the writing requirement but may/will still need to repeat the course to fulfill the major or general education requirement. Students who do not pass the writing component of a WI course must still satisfy the WAC requirements. Ways to meet this requirement are described on pages 44 and 45. Students should consult with their academic advisor to determine the most appropriate means of satisfying this requirement.

Academic Standing

Student Classification

Undergraduate students are classified by the total number of credit hours they have 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: 90-134.9 hours
- Senior: 135 hours or more

Entering a Major

All University College students with a cumulative GPA of 2.0 or higher must enter a major within a college by the time they have earned 90 credit hours, (or 135 credit hours if advised by Adult and Transfer Services) or they will be converted to nondegree status. Nondegree students are ineligible for financial aid, veteran's education benefits, and intercollegiate athletics.

Dean's List

Students who attain high GPAs during a quarter are placed on the Dean's List. To be named to the list, students must have at least a 3.4 GPA for the quarter; have completed for the quarter at least 12 hours of credit for courses in which they have received grades of A, B, or C; and cannot have received a grade of F, X, D, I, U, T, M, or N. The categories for the Dean's List are: 3.4-3.59, honors; 3.6-3.79, high honors; and 3.8-4.0, highest honors.

Good Standing

Students who have earned a cumulative GPA of 2.0 or higher, or who have not been on probation for more than two consecutive quarters, are considered to be in good standing.

Probation

Scholastic action is determined on the basis of cumulative GPA. When a student's cumulative GPA drops below 2.0, the registrar takes scholastic action by placing the student on probation. Students will not be placed on probation until they have attempted six or more credit hours. Whenever students subsequently attain a cumulative GPA of at least 2.0, they are removed from probation.

Students who are on probation must have their advisor's approval of their course selection before they register for classes. Advisor approval is also required for all drop-add transactions. The student's course load may be limited if the advisor feels such a restriction is necessary. The advisor may also require the student to complete counseling, remedial work, and course repeats; restrict enrollment; and require the student to complete other steps.

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 M, P, and I are not used in computing quarter and cumulative averages, they are not considered in determining scholastic action.

Petitioning for Exceptions

Exceptions to scholastic regulations may be petitioned to the University Undergraduate Petitions Council. Petition forms are available in most academic department offices and in the Office of the Registrar. These forms are filed in the registrar's office.

Students petitioning to drop a class with a grade of W or completely withdraw from a quarter, must submit the petition to the registrar's office before the end of the quarter in which the withdrawal is requested. Petitions submitted after the quarter has ended will, if approved, remove only the hours and points from the student's GPA. In this case, the course and original grade will remain a part of the student's record. Students should consult with their academic advisor before submitting a petition.
Repeating and Auditing Courses

Repeating Courses

Courses counted as part of the first 45 credit hours (including transfer hours) can be repeated if the grade earned was a D, F, or X. The course may be repeated until the student has achieved a grade of at least a C. Only the last attempt for each course will be counted in the cumulative GPA as long as it is completed no later than the quarter in which the first 60 credit hours are earned (exception: or until the course is offered again, if ever, during the regular academic year). However, each grade received for a repeated course will become a part of the student’s permanent record.

After the first 45 hours (including transfer hours), students may repeat any course in which they earned a grade of D, F, or X until they have achieved at least a grade of C. Each grade will become part of the permanent record and will be counted in the cumulative GPA.

Students may repeat courses in which they have earned a grade of A, B, or C in order to increase their knowledge or to meet program requirements, but the hours and points for the repeat will not be calculated in their hours earned or in the determination of their cumulative GPA. Neither will the hours or points be used to meet graduation requirements.

Whenever a student repeats a course, the student must specify this when registering.

Students in those program units where the repeat policy is more rigorous than that of the university shall follow the policy of that department, college, school, or division.

In calculating cumulative GPAs for the purpose of graduating with honors, only the first grade earned for a course will be counted.

Students may not repeat a course after graduation in order to alter their final GPA at the date of graduation. They may repeat a course later, but the second grade will not affect their undergraduate GPA.

Auditing Courses

If class space permits, a student may audit a course, with written approval from the instructor before enrolling. The amount of participation required of auditing students is left to the discretion of the instructor, but it cannot exceed that required of a regular student. The student may not use audited courses to establish full-time status, and the student may not change his or her registration from audit to credit or from credit to audit after the first week of class.

Dismissal and Readmission

Dismissal from the University

Students who remain on probation for two quarters may be dismissed from the university for unsatisfactory academic performance. Also, students enrolled in study skills classes who do not successfully complete more than one-half of their developmental course work over a period of three quarters will be subject to dismissal. Dismissal action is taken by the chief academic officer of the college, school, or division to which the students are assigned, in consultation with the head of the respective program unit or the academic advisor. In taking dismissal action, the academic officer will generally consider the student’s progress toward meeting degree requirements as well as overall academic performance.

Notice of dismissal from the university will be sent directly to the student by the chief academic officer of the college, school, or division to which that student is assigned.

Readmission

Students who have been dismissed will not be permitted to enroll for any courses at the university for a full calendar year (four consecutive quarters, including summer quarter). Readmission is not automatic. After a period of dismissal, students must submit a petition for readmission.

Readmission petition forms may be obtained from, and must be submitted through, the Office of Undergraduate Admissions. To be readmitted, the student must be accepted by a college, school, or division. Readmission petitions are reviewed by the chief academic officer or the petitions committee of the appropriate school, college, or division.

Readmitted students are continued on mandatory advising. Students who are readmitted following academic dismissal may be subject to special requirements to remove academic deficiencies as determined appropriate by the college, school, or division.
General Education at Wright State

A bachelor’s degree awarded by a university implies more than career preparation or specialized technical competency. A university education should be broadly based in order to promote intellectual growth, cultivate informed understanding, encourage breadth and flexibility of perspective, and foster a critical examination of social, cultural, and scientific realities. Accordingly, the General Education program at Wright State University seeks to:

- sharpen critical thinking, problem solving, and communication skills as a basis for life-long learning;
- cultivate an awareness of the moral and ethical insight needed for participation in the human community;
- increase knowledge and understanding of the past, of the world in which we live, and of how both past and present have an impact on the future.

These purposes are embodied in a program covering a broad spectrum of skills and knowledge, and organized to provide a coherent educational experience.

As a part of the requirements for a baccalaureate degree at Wright State University, students must complete a minimum of 57 hours of course work in the General Education program. The specific requirements are listed below and must be completed prior to graduation. In general, courses numbered 100 should be taken during the freshman year, and courses numbered 200 should be taken during the sophomore year; however, some programs at the university allow students to take the General Education courses throughout the four years of enrollment. Students should complete English 101 and 102 and the General Education mathematics requirement by the time they have earned 60 credits at Wright State University (see the General Education checklist on page 60).

Writing Across the Curriculum (WAC) in General Education

The required General Education WAC courses are ENG 101, ENG 102, and four Writing Intensive (WI) courses from each of the following four categories: (1) EC 200*; (2) SOC 200 (required); (3) One of the following Great Books courses: ENG 204, PHL 204, or REL 204; (4) One science course that satisfies the Area Four requirement and is designated WI.*

Transfer and returning students should see page 44 or meet with their academic advisor to determine the number of WI classes (if any) needed to complete the WAC in General Education requirement.

* WI sections of approved General Education substitution courses are available. Students should consult with an academic advisor before registering for a WI substitution course.

Registration for Writing Intensive Courses

Each WI course is clearly identified in the quarterly class schedule. When registering for a WI course, students are automatically registered for the writing component of the course, a "0" credit hour lab. Students may not drop a WI course and lab separately.

WAC Requirement Substitutions

Students who do not successfully complete the WI portion of four GE courses (excluding ENG 101 and ENG 102) may satisfy the GE requirement in other ways. Students should see pages 44 and 45 or contact an academic advisor for information on these options.

General Education Substitutions

Substitutions can be made for some General Education courses. Some major programs—as well as the preprofessional programs for premedical and preprofessional students (see the section on Preprofessional Programs in chapter 2)—may have program requirements that will affect a student’s choice of General Education courses. Approved substitutions listed below are open to any student as an option to the General Education course with which they are listed.

Honors Sections

Honors sections of General Education courses are available for both entering freshmen and continuing Wright State students who meet Honors Program criteria. Honors sections are limited to an enrollment of 20; encourage student participation; offer more sophisticated and complex assignments; and provide greater opportunities for analysis, synthesis, and creative expression. Honors students may also choose to substitute UH 201, 202, and 203 for some General Education courses (see below). For more information see the section on the University Honors Program on page 17.
General Education Requirements

Area One—Communication and Mathematical Skills

11 hours

Area One requirements help students develop a command of written communication, disciplined thought processes, and the ability to manipulate abstract and mathematical concepts.

ENG 101-4 Processes of Writing
Introduces students to principles of effective written communication and concepts of reading and writing to learn. Stresses invention, drafting, revising, and editing, along with effective critiquing and collaborating. Enrollment based on placement essay examination.

ENG 102-4 Effective Written Discourse
Adapts principles introduced in ENG 101 to writing tasks assigned throughout the university. Stresses writing effectively within various forums, reading critically, using source materials, and summarizing. Prerequisite: Grade of C or better in ENG 101.

MTH 145-3 Mathematics and the Modern World*
Applies mathematics to modeling real-world problems from the behavioral, computational, managerial, and social sciences. Includes such topics as graph theory, linear programming, probability, descriptive and inferential statistics, voting systems, game theory, population growth, computer algorithms, and codes and data storage. Prerequisite: MTH 126 or MTH 127 or equivalent or at least level 4 on the math placement test.

*Substitutions: MTH 143 or MTH 228 or MTH 229 and 230 or STT 264 and 265 or STT 160

Area Two—The Western Experience

15 hours

Area Two requirements help students develop a historical perspective and aesthetic appreciation through studying the Western heritage, including its written record and artistic achievements, in relation to contemporary culture.

The Western World
(All required)

HST 101-3 The Western World: The Ancient and Medieval Eras
An examination of the character of the premodern world from prehistory through the fourteenth century, with special attention to those aspects of ancient and medieval life that had the greatest effect on the development of Western society, politics, and culture. Prerequisite: HST 101.

HST 102-3 The Western World in Transition: The 14th-18th Centuries
An examination of the roots of the modern Western world emphasizing the revolution in economic, political, religious, and demographic realities that occurred between the fourteenth and the eighteenth centuries. Prerequisite: HST 101.

HST 103-3 The Modern Western World: The 19th-20th Centuries
An examination of the nature and consequences of modernization—its failures, accomplishments, and problems, with special attention to the phenomena that shaped the Western world of the nineteenth and twentieth centuries. Prerequisite: HST 102.

Great Books of the Western World*
(Writing Intensive) (Choose one)

ENG 204-3 Great Books: Literature
An introduction to selected masterpieces of poetry, drama, and fiction from the Western literary tradition, from the Greeks to the twentieth century, viewed in their historical context and for their enduring interest. (Writing intensive)

PHL 204-3 Great Books: Philosophy
An introduction to selected great books in the history of Western philosophy, chosen from each of three eras (ancient/medieval, modern, and contemporary) and examined both within their respective historical frameworks and as an exercise in critical thinking. (Writing intensive)

REL 204-3 Great Books: The Bible and Western Culture
A study of selected Biblical writings viewed in their original cultural contexts and chosen to reflect the varieties of Biblical literature, the Bible's relationship to various societies, and its role in the development of Western culture. (Writing intensive)

*Substitution: Honors students may meet the Great Books requirement with UH 201. (Writing intensive)
Fine and Performing Arts
(Choose one)

ART 214-3 Visual Art in Western Culture
A general introduction to the visual arts focusing on selected major works of art throughout history. Discusses comparisons across time, basic art media, and the formal characteristics of art.

MUS 214-3 Music in Western Culture*
An introduction to the music of Western culture from the Middle Ages to the present. Emphasis on listening skills; elements of music; major styles, genres, and composers; and cultural context.

* Substitution: MUS 121 and 122.

TH 214-3 The Theatre in Western Culture
An introduction to the many arts of the theatre, including the roles of the actor, playwright, director, designer, critic, and audience. Selected scripts from representative historical periods are examined as an aid in understanding the theatrical event.

* Substitution: Honors students may meet the Fine and Performing Arts requirement with UH 201.

Area Three—The Non-Western World
6 hours

Through a comparative and regional study of non-Western cultures, Area Three requirements help students develop an understanding of cultures other than their own and of the realities of global interdependence.

Comparative Studies
(Choose one)

CST 220-3 Comparative Non-Western Environments
An examination of distinctive environments of Asia and Africa through analysis of the geographic patterns of land use, population, settlements, economic activities, languages, religions, and political systems.

CST 230-3 Comparative Non-Western World Views
An examination of the world views of selected non-Western peoples and their varied expression in literature and religion, emphasizing examples from Asia, Africa, Latin America, and the Middle East.

CST 230 Comparative Non-Western Literature
An introduction to selected non-Western literature from Asia, Africa, Latin America, and the Middle East, emphasizing common cultural, social, and political themes.

CST 230 Comparative Non-Western Religions
An introduction to non-Western religious world views, their expression, and their communication, using examples from Africa, Asia, Latin America, and the Middle East and exploring differences between major types of cultures and religions.

CST 240-3 Comparative Non-Western Cultures
An introduction to the cultural diversity and uniqueness of selected areas of Asia, Africa, Latin America, and the Middle East as reflected in their cultural systems or in particular cultural manifestations such as the arts.

CST 240 Non-Western Cultural Systems
An introduction to non-Western cultural systems with examples drawn from several regions of the world, emphasizing how non-Western societies have addressed universal human problems and adapted to changing world conditions.

CST 250-3 Comparative Non-Western Social Systems
An examination of political processes and economic systems in Asia, Africa, Latin America, and the Middle East with special attention to contemporary issues.

CSE 250-3 Comparative Non-Western Economic Systems
A comparison of the economic systems in Asia, Africa, Latin America, and the Middle East with the Western system with which most students are familiar; emphasis on developing and socialist economies and on contemporary problems, including technological change and resource development.

CST 250 Comparative Non-Western Political Systems
A comparative study of the political processes, institutions, ideologies, and contemporary issues in non-Western societies, emphasizing the relationships between culture and politics.
Regional Studies
(Choose one)

RST 260-3 Regional Studies: Asia
An introduction to the environments, human organizations, and populations of selected regions or countries in Asia, providing an overview of the region with focus on a particular part of the region such as Japan, China, or South Asia.

RST 260 Asia: Japan
A brief introduction to Asian environments, population distribution, and human organizations and a detailed examination of economic, geographic, political, religious, and social aspects of Japan.

RST 260 Asia: China
A brief introduction to Asian environments and cultures and a detailed examination of the development of China and of the conflict between traditional values and cultural patterns and current development efforts.

RST 260 Asia: South Asia
A brief introduction to the culture and society of Asia and a detailed examination of the themes and structures that unify South Asian culture.

RST 270-3 Regional Studies: Africa
An introduction to African environments, diversity of cultural heritages, changes due to modernization, colonialism, slavery, and independence with a brief survey of the relations of Africa to other non-Western regions and the contributions of Africa to world civilization.

RST 280-3 Regional Studies: Latin America
A survey of non-Western societies, including Indians, mestizos, blacks, and the peasantry, from pre-Columbian and African origins to the present, in terms of ideology, organization, social structure, culture, and economic activities.

RST 290-3 Regional Studies: The Middle East
An introduction to the history, peoples, cultures, and geography of the Middle East, from Mauritania to Pakistan, from the seventh century to the present.

Area Four—Understanding the Contemporary World
25 hours

Area Four requirements help students develop an understanding of the physical world, of the relationship of science and technology to society, of individual development, of institutions and their impact on individuals, and of the methodologies used in studying these matters.

Natural Sciences
Choose three courses (lecture and lab); at least one must be writing intensive (WI); courses offered as WI may vary from quarter to quarter. See quarterly class schedule.

Biology*

BIO 105-4 Introductory Biology: Food
Biological principles applied to the nature of food, its production, and use in the human body. Topics include molecular biology, photosynthesis, respiration, digestion, nutrition, agricultural ecosystems, issues of feeding a rapidly growing human population. 3 hours lecture, 2 hours lab.

BIO 106-4 Introductory Biology:
Biodiversity
Biological principles and processes applied to the origin, interaction, and extinction of species. Laboratory and lab topics include paleobiology, speciation, macroevolution, adaptive radiation, symbiosis, biogeography, and the scientific management of modern biological resources. 3 hours lecture, 2 hours lab.

BIO 107-4 Introductory Biology: Disease
Biological principles applied to the study of disease: causes, controls, and natural defense against infection. Topics include microscopy, pathology, antibiotics, immunology, and epidemiology with historical perspectives and an emphasis on investigative techniques. 3 hours lecture, 2 hours lab. Prerequisite: BIO 106.

*Sequence substitution (may be required for certain majors): BIO 112, 114, and 115. Honors students may substitute H 20J for B 10.

Chemistry*

CHM 105-4 Chemistry of Our World: Living Things
An examination of the principles of covalent bonding and of the structures and reactions of molecules of importance to living things, with attention to the technological, regulatory, and social complexities of problems related to them. 3 hours lecture, 2 hours lab.

CHM 106-4 Chemistry of Our World:
Materials
An examination of the bonding of metals and nonmetals to explain the nature of familiar materials of industrial importance with some attention to the risk-benefit implications of these materials and technologies for consumers. 3 hours lecture, 2 hours lab.
CHM 107-4 Chemistry of Our World: Energy and the Environment
An examination of the gaseous and liquid states and thermodynamics as a basis for understanding air and water quality, and fossil and nuclear fuels with some attention to the chemistry of the solar system. 3 hours lecture, 2 hours lab.

*Sequence substitutions (may be required for certain majors): CHM 121, 122, and 123; or CHM 101 and 102 and BMB 250 and PHR 340. Honors students may substitute UH 203 for CHM 107.

Geological Sciences*

GL 105-3 The Planet Earth
An introduction to the composition and structure of the earth through a study of the physical and chemical processes (weathering, sedimentation, and the plate tectonic cycle) that have operated to produce the earth, its minerals, rocks, landforms, and economic mineral fuel deposits. Concurrent registration in GL 115 required.

GL 115-1 The Planet Earth Laboratory
Study of rocks and minerals; field trips, map interpretation; and practical work on ground water, glaciation, and structural geology. Laboratory component for GL 105.

GL 107-3 The Earth and Human Affairs or Geologic Development of Ohio: Rocks, Fossils, and Resources
Examination of the interactions of humans with the earth in terms of geological hazards and natural resources. Also offered as Geologic Development of Ohio: Rocks, Fossils, and Resources, a field course emphasizing the geology of Ohio. Corequisite: GL 117.

GL 117-1 The Earth and Human Affairs Lab
Exercises and experiments on geologic hazards (earthquakes, floods, mass movements), resources (soil and water), and mineral economics. Also offered as Geologic Development of Ohio laboratory. Laboratory component for GL 107.

GL 107-4 The Earth and Human Affairs
An examination of the interactions of humans with the earth in terms of geological hazards (floods, landslides, earthquakes, and volcanoes) and of natural resources (soil, water, ores, industrial minerals, and fossil fuels). Lab exercises on slope stability, earthquakes, soil conservation, ground water, toxic waste, and the economic aspects of mineral extraction and fossil fuels. 3 hours lecture. Recommended preparation: GL 106.

GL 117-1 Earth and Human Affairs Lab
Exercises and experiments on geologic hazards (earthquakes, floods, mass movements), resources (soil and water), and mineral economics.

*Sequence substitutions (may be required for certain majors): GL 251/252, 253/254, and 255/256. Honors students may substitute UH 203 for GL 107.

Physics*

PHY 105-3 Sounds and Colors
A study of wave motion with an orientation toward phenomena experienced by our senses, such as musical sounds, noise, and the colors occurring in nature. Concurrent registration in PHY 115 required.

PHY 115-1 Sounds and Colors Laboratory
Experiments to illustrate the physical aspects of what we see and hear. Lab component of PHY 105 for students using the course to meet the General Education science requirement.

PHY 106-3 Revolutions in Physics
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. Concurrent registration in PHY 116 required.

PHY 116-1 Revolutions in Physics Laboratory
Astronomical observations and experiments. Laboratory component of PHY 106 for students using the course to meet the General Education science requirement.

PHY 107-3 Stars, Galaxies, and the Cosmos
An introduction to astronomy with emphasis on the universe of stars and galaxies and covering stellar evolution, astrophysics, and cosmology. Concurrent registration in PHY 117 required.

PHY 117-1 Stars, Galaxies, and the Cosmos Laboratory
Astronomical observations and measurements, laboratory experiments, and a visit to a planetarium. Lab component of PHY 107 for students using the course to meet the General Education science requirement.

*Sequence substitutions (may be required for certain majors): PHY 111/101, 112/102, and 113/103 or PHY 240/200, 242/202, 244/204. Honors students may substitute UH 203 for PHY 105 or 106 or 107.
Behavioral Science

(Required)

PSY 105-4 Psychology: The Science of Behavior*
Considerations of the causes of behavior. Includes physiological processes; learning, memory, and processing of information; perceptual, cognitive, and social changes from birth to old age; and individual differences in thoughts, feelings, and actions.

*Sequence substitution: PSY 111 and 112.

Social Institutions and Processes

(All required)

SOC 200-3 Social Life
An introduction to the processes through which individuals become members of groups, organizations, institutions, and societies, and how human social interactions lead to changes in social life and structures. (Writing intensive)

PLS 200-3 Political Life
An examination of political power relationships in contemporary society, emphasizing the origins and forms of power and the key social structures exercising power with contemporary public issues providing case studies of the consequences of political relationships.

EC 200-3 Economic Life*
An introduction to basic economic concepts such as resource allocation, costs, supply, demand, and public goods; topics covered include American capitalism, market failures, unemployment, inflation, and taxation. (Writing intensive)

*Sequence substitution: EC 201, 202, and 203.

† Honors students may substitute UH 202 for any one of the three required Social Institutions and Processes courses.
CHOOSING COURSES AND MAJORS
Choosing Courses

Students are responsible for choosing courses that are appropriate for their academic needs and goals. Although there are many factors for students to consider, choosing classes need not be viewed as a difficult task. There are logical patterns to the course requirements of the many different majors, and this section of the catalog can help students understand those patterns.

On the next few pages, students will find the following references:

- **General Education Checklist.** This checklist is very useful for first- and second-year students for selecting primary and alternate courses. It can also help students keep track of their remaining General Education requirements by checking off the category boxes as they complete courses. Note that some categories show an “RS” symbol, indicating that a required substitution or a required selection is possible in that category due to a major’s program requirements. Students should check their major’s requirements for such substitutions or selections before taking a course from these categories. Undecided students usually avoid these categories when possible in favor of those without an RS symbol.
- **Math and Statistics Sequences.** This flowchart shows some of the most commonly required sequences and prerequisites. It is a graphic guide to which mathematics and statistics courses must be taken in what order.
- **Still Deciding on a Major?** This guide lists some courses required by every Wright State major and shows a sample first-year schedule for undecided students.
- **Exploring Majors and Careers.** This guide suggests some on- and off-campus resources for students who need guidance in choosing a major or career.
- **Summary of Program Admission Requirements.** This quick reference shows admissions requirements for each college. Where applicable, a further breakdown is given of admissions requirements to individual departments.

Sources for Courses

Normally a student who was declared a major will refer to an official listing of required and recommended courses for that major, including general education courses. There are several sources for finding these required and recommended courses. This catalog, for instance, shows program requirements for each major, and a summary of General Education courses and requirements is provided on page 60. Also, most academic departments provide program check sheets for their majors.

Undecided Students

Students who are still exploring majors usually choose courses recommended by their advisor and General Education courses from categories that have no required substitutions or required selections due to a student’s major (i.e., no RS symbol on the General Education Checklist). Undecided students should also refer to the Exploring Majors and Careers guide on page 60 for help in choosing courses and exploring majors.

Meeting with an Advisor

While all students may meet with their academic advisor for help in choosing courses, this is often not required. However, it is strongly recommended that students meet with their advisor during their first quarters after entering the university, and again upon transferring to the college or school of their major. Undecided students should work especially closely with their advisor.

Three Course Selection Tools

- **Raider Express Telephone Registration**
- **“Ask Me” Computer Terminals**
- **Quarterly Class Schedule Bulletin**

The computer terminals and Raider Express Telephone Registration are invaluable to students for checking the availability of a specific course (see the back cover of the quarterly class schedule for details on how to use phone registration). However, students also need to use the quarterly class schedule bulletin to check for prerequisites, corequisites (e.g., a concurrent lab), and restrictions that limit enrollment in a particular section of a course to a specific group of students, such as “honors” or “elementary education majors.”

First-Year Courses

First-year students usually choose most of their courses from General Education, math, developmental education, and specific courses required for their major as listed in the catalog or on a program check sheet. Students are expected to complete the general education English, math, history, and natural science requirements before reaching junior status; therefore, many students enroll in some of these courses during their first year.
English Courses

Placement test results (or transfer credit) determine which English course a student should enroll in first. The student's advisor will interpret this information for the student. Some students need developmental education course work to prepare them for ENG 101. Many first-year students will not start ENG 101 until their second quarter, and many of those who do take ENG 101 their first quarter will not enroll in ENG 102 until their third quarter.

Math Courses

Once students begin math courses, it is recommended that they continue with math each quarter until their math requirements are completed. The starting point is determined by placement test score or transfer credit, and the final math courses are shown in the major's program requirements in the catalog listing and on the departmental checksheets. The Math and Statistics Sequences chart on page 61 is a graphic guide showing common math and statistics course pathways as determined by the course prerequisites. Any student who has not passed a math course within the last year must take the math placement test before registering for a math course.

Writing Across the Curriculum

For information on the university's Writing Across the Curriculum program and Writing Intensive (WI) courses, see pages 44, 45, 47, and 50. Writing Intensive courses are designated by "WI" on the General Education Checklist on page 60. Note that one of the General Education science courses must be taken as WI.

Courses Required to Enter a Major

First- and second-year students should select appropriate courses that will allow them to satisfy the requirements to enter the college and department of their major. The Summary of Program Admission Requirements on page 63 is an abbreviated listing of these requirements. Using this guide, students may determine what specific courses, grades, or GPA they need for entry. The listing may also be useful to students advised in the University College Academic Advising Center (and Adult and Transfer Services) who must select a new major because they have reached 90 hours (135 hours in Adult and Transfer Services) and still have not met the admission requirements for their intended major.

Summary

Students are encouraged to use the information above and in the pages that follow to help them make wise course selections. While students are expected to be responsible for their own course selections, advisors are available to aid students in making those selections.
General Education Checklist

Area One—Communication and Mathematical Skills
Composition (8 hours)
Both required
- ENG 101 Freshman Composition
- ENG 102 Freshman Composition
Mathematics (3 hours)
Required (RS)
- MTH 145 Mathematics and the Modern World*

Area Two—The Western Experience
The Western World (9 hours)
All required
- HST 101 The Western World: The Ancient and Medieval Eras
- HST 102 The Western World in Transition: The 14th-18th Centuries
- HST 103 The Modern Western World: The 19th-20th Centuries
Great Books of the Western World (3 hours)
- Choose one (RS; H) (WI)
  - ENG 204 Great Books: Literature (WI)
  - PHL 204 Great Books: Philosophy (WI)
  - REL 204 Great Books: The Bible and Western Culture (WI)
Fine and Performing Arts (3 hours)
- Choose one (RS; H)
  - ART 214 Visual Art in Western Culture
  - MUS 214 Music in Western Culture*
  - TH 214 The Theatre in Western Culture

Area Three—The Non-Western World
Comparative Studies (3 hours)
- Choose one (RS)
  - CST 220 Comparative Non-Western Environments
  - CST 230 Comparative Non-Western Literature
  - CST 230 Comparative Non-Western Religions
  - CST 240 Non-Western Cultural Systems
  - CST 250 Comparative Non-Western Political Systems
  - CSE 250 Comparative Non-Western Economic Systems

Regional Studies (3 hours)
- Choose one
  - RST 260 Asia: Japan
  - RST 260 Asia: China
  - RST 260 Asia: South Asia
  - RST 270 Africa
  - RST 280 Latin America
  - RST 290 The Middle East

Area Four—Understanding the Contemporary World
Natural Sciences (12 hours)
- Choose three courses (lecture and lab) (RS). At least one must be writing intensive (WI).
  - Biology*
    - BIO 105 Introductory Biology: Biology of Food (Lab incl.)
    - BIO 106 Introductory Biology: Biological Diversity (Lab incl.)
    - BIO 107 Introductory Biology: Biology of Disease (Lab incl.)
  - Chemistry*
    - CHM 105 Chemistry of Our World: Living Things (Lab incl.)
    - CHM 106 Chemistry of Our World: Materials (Lab incl.)
    - CHM 107 Chemistry of Our World: Energy and the Environment (Lab incl.)
  - Geological Sciences*
    - GL 105 The Planet Earth & GL 115 Lab
    - GL 106 The Evolving Earth & GL 116 Lab
    - GL 107 The Earth and Human Affairs and GL 117 Lab
  - Physics*
    - PHY 105 Sounds and Colors & PHY 115 Lab
    - PHY 106 Revolutions in Physics & PHY 116 Lab
    - PHY 107 Stars, Galaxies, and the Cosmos & PHY 117 Lab
  - Behavioral Science (4 hours) Required
    - PSY 105 Psychology: The Science of Behavior*
  - Social Institutions and Processes (9 hours) All required (H)
    - SOC 200 Social Life (WI)
    - PLS 200 Political Life
    - EC 200 Economic Life (RS) (WI)

Total Hours Required 57

*Substitutions are allowed for these courses; see the course descriptions on pages 31-35 and program requirements listed by the departments.

H=Honors students may meet the Great Books or The Fine and Performing Arts requirement with UH 201. Honors students may substitute UH 202 for any one of the three required Social Institutions and Processes courses.
RS=A required substitution or a required selection is possible; check major program requirements.
WI=Writing Intensive sections will be available for satisfying the WAC requirement. See page 44 for more information. Courses offered as WI may vary from quarter to quarter; see quarterly class schedule.
Math and Statistics Sequences

This chart displays the prerequisites and sequences for commonly required math and statistics courses. Prerequisites for a particular course are shown above that course. Students’ first math courses depend on their math placement levels and majors. Students should consult with their advisor or catalog/program checklist for more detailed information.
Still Deciding on a Major?

Course Planning

Some majors require that students select specific General Education courses while others allow choices. Substitutions for certain General Education courses may also be required for some majors. The following courses are required regardless of a student's major; therefore, they are safe choices for undecided students:

- ENG 101 and 102*
- MATH courses through MTH 126/127*
- HST 101, 102, and 103
- PSY 105, PLS 200, SOC 200, and any RST course

Sample First-Year Schedule for Undecided Students

Fall
ENG ___ or DEV ___*  
MTH ___ or DEV ___*  
HST 101  
Gen Ed or Elective

Winter
ENG ___ or DEV ___  
MTH ___ or DEV ___  
HST 102  
Gen Ed or Elective

Spring
ENG ___ or Gen Ed  
MTH ___ or Gen Ed  
HST 103  
Gen Ed or Elective

*Initial courses in English and mathematics are determined by placement tests or transfer credit.

This sample is only a general guide. Each student's real schedule may vary considerably, since there is great flexibility as to when many courses may be taken, especially General Education.

Undecided students often need more information on different majors and courses than students with a declared major, and therefore undecided students should work closely with their academic advisor.

Exploring Majors and Careers

Where and How to Get Information

Career Services: 3rd Floor, Student Union, 775-2556
- Career exploration counseling
- SIGI PLUS: computerized career guidance system
- Career resources library
- Trade publications
- Future job trends information
- Resume writing assistance
- Co-operative education: internships
- Career planning and decision-making course (LA 201)

University College: University Hall, 775-5750
- Academic advising and adjustment strategies
- Information on requirements for majors
- SIGI Plus: computerized career guidance system

Referral Sources: Informational interviewing ("networking")
- Advisors in the colleges
- Professors
- Professionals working in areas of interest
- Family members and friends

Courses
- General Education
- Electives to explore areas of interest
- Skill-building courses: computer literacy, interpersonal communication, technical/professional writing, etc.
- Class visits to learn course content (with instructor approval)
- College-sponsored career information courses (EGR 101, SM 198, BUS 100, EE 240, ME 199)

Campus Bookstore
- Review textbooks for courses of possible interest

Volunteer Opportunities
- Organizations
- Community service
Summary of Program Admission Requirements

Listed below is an abbreviated summary of the requirements to enter major programs, organized by college, and then by department, where needed. For a detailed statement of the admission requirements for a particular program, please see the listing for that specific college and the major in the following sections of the catalog. Grade point averages (GPA) are cumulative unless labeled otherwise.

College of Business and Administration (see p. 66)
• 2.5 GPA • 45 hrs. • grade of C or higher in ENG 101, 102, and MTH 128/129 or in a higher-level math course

College of Education and Human Services (see p. 83)
—Teacher Education Programs (minimums for consideration for admission): • 2.5 GPA • 45 hrs. • acceptable scores on the Pre-Professional Skills Test (PPST) • formal application • interview • two letters of recommendation • writing sample
—Rehabilitation Services • 2.35 GPA • 24 hrs.

College of Liberal Arts (see p. 114)
• 2.0 GPA • 24 hrs. • ENG 101 and 102 with grade of C or higher, plus HST 101, and two other General Education courses

Additional requirements for specific majors:
—Communication: • 2.5 GPA
—Economics: • grade of C or higher in MTH 128/129 or in a higher-level math course
—Modern Language: • 2.5 GPA or 3.0 GPA in foreign language courses
—Motion Picture BA: • 2.25 GPA
—Social Work (minimum for consideration for admission): • 2.25 GPA • grade of C or higher in SW 270 and 271 • formal application • additional requirements on p. 136
—Music: • audition • three outside recommendations • formal application
—Urban Affairs: • 2.3 GPA
—B.F.A. in Art or Theatre (except for Motion Picture Production): • only 2.0 GPA and 24 hrs. are required
—B.F.A. in Motion Picture Production: • only 2.25 GPA, 24 hrs. and grade of B or A in TH 131 and 180

College of Science and Mathematics (see p. 156)
• 2.0 GPA • 24 hrs. • grade of C or higher in 2 courses in chosen major

Additional requirements for specific majors:
—Math: • MTH 229 and 230 with grade of C or higher in each and 2.5 GPA or higher for the average of the two
—Psychology: • 2.25 • 30 hrs.

College of Engineering and Computer Science (see p. 100)
• 2.25 GPA • 45 hrs. • grade of C or higher in ENG 101, 102, MTH 229, 230

Additional requirements for specific majors:
—Computer Science: • 2.25 GPA in all CS and CEG courses • grade of C or higher in CS 240, 241, 242
—All Engineering programs, including Computer Engineering: • grade of C or higher in MTH 231, CHM 121 or PHY 240/200, and the computer programming class(es) specified by the department

College of Nursing and Health (see p. 152)
• 2.5 GPA • 48 hrs. in prescribed courses • 2.5 GPA and grade of C or higher in all prerequisite courses
• formal application • admission is competitive • additional requirements on p. 153
Business administration majors are required to complete the program of study that is in effect at the time of their admission to the College of Business and Administration. Specific requirements for admission to the college follow; these requirements are determined by the faculty and are subject to change.

Admission from University College and Other WSU Colleges

The college has a two-tier admission process. Students in University College or another unit of Wright State must meet the following Tier I requirements to transfer to the College of Business and Administration:

**Tier I**
1. 45 hours earned.
2. Completion of ENG 101 and 102, and either MTH 128 or 129 (or higher-level math class), all with a letter grade of C or better.
3. 2.5 minimum cumulative GPA.

Students who meet the above requirements will be assigned to a prebusiness category and will be required to meet the following Tier II requirements before they can enroll in junior- or senior-level classes.

**Tier II**
Completion of:
- ACC 201, 202
- EC 201, 202, 203
- MS 201, 202
- CS 205
- MTH 228

**Transfer Students**

Transfer students seeking admission to the College of Business and Administration must satisfy the criteria for Wright State students.

Students who return to Wright State University after being absent for four or more quarters must reapply for admission and satisfy the same admission requirements listed above for Wright State students. These students will be required to complete the program requirements that are in effect at the time of their readmission to the college.

Acceptable transfer credit will satisfy any of the above requirements.

Enrollment in 300- or 400-level business classes is restricted to business majors who have completed Tier II and attained junior standing. This is to ensure that students have the appropriate prerequisites and an adequate foundation for their professional course work in business.
In the quarter that they register for their last Tier II requirements, students will be automatically transferred from a prebusiness to a business major number permitting enrollment in 300-level business classes. If a student finds that this has not happened and he or she cannot register for 300-level business classes, the student should contact the advising office right away.

Advising

Program advisors are available in 110 Rike Hall to help students plan their program of study. Students receive a list of their General Education and major degree requirements when they are admitted to the college, and they are required to meet with an advisor to review these requirements and sign the requirements sheets. Signatures are not required for registration, but students are encouraged to see an advisor at least once a year to be sure they are on schedule for their projected graduation date. Advisors may also provide help with procedural or academic problems.

Students will also be assigned a faculty advisor based on their major. Faculty advisors can discuss career opportunities and career planning, recommend major and business electives, and discuss the curriculum of their major field. A list of faculty advisors is available in 110 Rike Hall or in department offices.

If a student’s cumulative GPA falls below the 2.0 required for graduation, the student will be placed on probation. While on probation, students can enroll in only four courses. If a student’s cumulative GPA remains below 2.0 for three consecutive quarters, the student is subject to dismissal. Students on probation should meet with an advisor each quarter before registering.

Degrees and Areas of Study

A broad curriculum is offered, leading to a Bachelor of Science in Business degree with majors in accounting, business economics, finance, financial services, human resource management, international business, management, management information systems, marketing, and operations management.

The requirements for a Bachelor of Science in Business degree consist of four components. The first is the university General Education requirements (see pages 50–55) for an explanation of General Education requirements. The second are the business core requirements that all students in the College of Business and Administration complete. This is to provide the student with an understanding of all functional areas of business. The third component consists of the requirements of the student’s particular major in business. The fourth is comprised of business and nonbusiness electives. Business electives must be chosen from courses that are offered by the College of Business and Administration but are not already required by the student’s major. Nonbusiness electives are nonbusiness courses similar to the General Education requirements. Certain restrictions do apply and are noted on the major checksheet. The exact number of electives required will depend on a student’s major in business.

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.

Graduation Requirements

In order to graduate, all students must:
1. complete 189 credit hours of acceptable academic work.
2. attain a 2.0 or better GPA.
3. complete all course requirements as specified by the student’s program of study.
4. complete the last 45 hours of course work at Wright State.
5. complete at least 50 percent of required business courses at Wright State.
6. complete a minimum of 30 credit hours of upper division course work at Wright State.
7. (for accounting and management majors) maintain a 2.0 or better cumulative GPA in major courses.

Seniors should meet with their academic advisor before their last quarter to be sure they have completed all requirements for graduation.

Business Minors

A minor program provides students with a structured concentration of study that will be noted on students’ transcripts. The following minors are offered by the College of Business and Administration.

Business Minor is open to nonbusiness majors who have been admitted to a major program of study. This minor is recommended for nonbusiness majors who may wish to pursue a Master of Business Administration. Forty-eight hours are required: CS 205; EC 201, 202, 203; ACC 201, 202; MS 201, 202; MGT 302; MKT 301, 302; FIN 301, 302; LAW 350; and MIS 300.
Economics is open to business and nonbusiness majors who have been admitted to a major program of study. Twenty-four hours are required: EC 201, 202, 203, and five economic electives.

Management is open to business and nonbusiness majors who have been admitted to a major program of study. Students will be admitted when they have attained junior standing and have been admitted to a major program of study. Twenty-four hours are required: MGT 302, 321, 485; LAW 350, 420, and three electives.

Management Information Systems is open only to business majors. Students will be admitted after attaining junior status and completing Tier II requirements. Twenty-one hours are required: MIS 321, 322, 410, 420, and three electives.

Operations Management is open to business and nonbusiness majors. Students will be admitted when they have attained junior standing and been admitted to a major program of study. Twenty-four hours are required: MS 203, 306, 331, 435, 437, 438, 439, and one elective.

Marketing is open to business and nonbusiness majors. Students will be admitted when they have attained junior standing and have been admitted to a major program of study. Twenty-five hours are required: MKT 301, 302, 303, 336, 416, and three electives.

Nonbusiness majors may complete only one minor and may not take additional business courses beyond those required for their minor. Additional information and application forms for business minors are available in 110 Rike.

Honors Program

The College of Business and Administration sponsors an honors program for all students who have demonstrated outstanding academic ability and superior accomplishments to complete a program in the college that 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.

Cooperative Education

The Cooperative Education Program at Wright State University gives students a chance to integrate classroom theory with practical, career-related work experience. Business students may alternate full-time quarters of on-campus study with quarters of full-time educationally related jobs, or may choose to combine a part-time co-op work schedule with a reduced, but full-time, course load.

Through the co-op program, students can gain valuable learning experiences, test career interests, learn more about business career fields, and develop job-related skills, as well as earn income for college expenses. Details on program requirements and procedures are available in the Office of Career Services, E334 Student Union.

Student Organizations

Each of the majors offered by the College of Business and Administration sponsors a student club. Participation in these clubs gives students an opportunity to gain valuable career information and develop closer ties with the faculty and other students in their major. Club activities include business meetings, speakers from business and industry, tours of local businesses, career fairs, and social events.

The current clubs are the Accounting Club, Association of Information Technology Professionals, Economics Club, Finance Club, International Business Club, Operations Management Club, Management Club, Marketing Club, and the MBA Association. Several of these clubs are affiliated with professional societies. Membership in these clubs is open to all students. Students may contact the appropriate department office or stop in 110 Rike Hall for information on how to join.

The Association of Black Business Students was organized to strengthen the relations between black students and the entire campus and business community. The association accomplishes this by promoting academic excellence, professional and personal development, and cultural awareness. Membership is open to any Wright State University student.

Honor Societies

A chapter of Beta Gamma Sigma, the national scholastic honor society in 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. In addition, there is a chapter of Alpha Iota Delta, the national honor society for operations management majors, Beta Alpha Psi, the national honorary accountancy fraternity, and Sigma Iota Epsilon, the national honorary management fraternity.
Departments/ Major Programs

There are 10 major programs available to students in the College of Business and Administration. For those students who wish to major in business, but who do not know which major they are interested in, there is an undecided category. To ensure timely graduation, students are encouraged to select a major before the junior year. However, students may remain undecided until the middle of their junior year; by that time they will have had course work in all the major areas in business and will be in a better position to decide on a major. Advisors are available to help students with this decision. Students who intend to major in accountancy, management information systems, or operations management should declare their major before their junior year, because the major requirements follow a specific sequence. Generally, it is possible to change majors within business during the junior year without delaying graduation.

The course requirements of the freshmen and sophomore year are the same for all majors except management information systems and operations management and are listed below. Please note that accountancy, finance, and management information systems majors are required to complete ACC 203.

Required Courses—Majors in Business and Administration

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

The program requirements listed on the following pages illustrate a recommended schedule for full-time students. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure they observe prerequisite requirements of the courses.

General Education Requirements 51

Required Substitutions:
MTH 228
EC 201, 202, 203

Freshman Year

First Quarter 14-16
ENG 101 4 MTH 128 or 129 3-5
Science I* 4 HST 101 3

Second Quarter
ENG 102 4 MTH 228 5
Science II* 4 HST 102 3

Third Quarter 17
Fine Arts* 3 CS 205 4
Science III* 4 CST/CSE* 3
HST 103 3

Sophomore Year

Fourth Quarter 16
ACC 201 3 PSY 105 4
EC 201 3 RST/RSE* 3
MS 201 3

Fifth Quarter 16
ACC 202 3 ENG 330 4
EC 202 3 SOC 200 3
MS 202 3

Sixth Quarter 15
Nonbusiness elective† 3 PLS 200 3
EC 203 3 Great Books 3
MS 203 3

† Students have a choice of courses that meet general education requirements in the following areas: Great Books, Fine and Performing Arts, Comparative Studies, Regional Studies, and Natural Sciences. The chapter on General Education Requirements, on pages 50-54, lists the specific courses that meet the requirements in these areas.

‡ Accountancy, Finance, and Management Information Systems majors are required to complete ACC 203.

Accountancy

Professors Sprohge, Talbott (interim chair)
Associate Professors Bushong, Hereth, Lightle
Assistant Professors Bukovsky, Brackney, Iyer, Kremer (WSU-Lake Campus)
Lecturers Houston
Instructor Terzian

The objective of the accountancy major is to educate students for professional careers in public, industrial, governmental, and not-for-profit accounting. To this end, the program provides a broad educational experience for students and gives them a background for completing professional accounting examinations such as the CIA and CMA. This major also provides an excellent undergraduate background for a degree in law.

Students who plan to take the CPA (Certified Public Accountant) should pursue The Master of Accountancy Program upon completion of the bachelor program in order to meet the education requirements of The Accountancy Board of Ohio.
Transfer students who major in accountancy should note that at least 18 credit hours of their accountancy courses must be taken at Wright State. The department has a chapter of Beta Alpha Psi, the national accountancy honorary fraternity.

Degree Requirements—Accountancy

Bachelor of Science in Business Degree

The program in accountancy requires a minimum of 189 credit hours.

The following program represents a recommended schedule for full-time students pursuing a four-year program. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure that they meet prerequisite requirements. Planning schedules are available in the department office.

Junior Year

<table>
<thead>
<tr>
<th>Seventh Quarter</th>
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<tbody>
<tr>
<td>FIN 301</td>
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<tr>
<td>MKT 301</td>
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</tr>
<tr>
<td>MIS 300</td>
<td>4</td>
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<table>
<thead>
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<th>Eighth Quarter</th>
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</thead>
<tbody>
<tr>
<td>FIN 302</td>
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<tr>
<td>MKT 302</td>
<td>4</td>
</tr>
<tr>
<td>MGT 302</td>
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<table>
<thead>
<tr>
<th>Ninth Quarter</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 303</td>
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<tr>
<td>LAW 350</td>
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</tr>
<tr>
<td>ACC 306</td>
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Senior Year

<table>
<thead>
<tr>
<th>Tenth Quarter</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 490</td>
<td>3</td>
</tr>
<tr>
<td>EC 320</td>
<td>3</td>
</tr>
<tr>
<td>Nonbusiness Elective</td>
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<table>
<thead>
<tr>
<th>Eleventh Quarter</th>
<th>16</th>
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<tbody>
<tr>
<td>MS 306</td>
<td>3</td>
</tr>
<tr>
<td>LAW 360 or 370</td>
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</tr>
<tr>
<td>MGT 491</td>
<td>3</td>
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<table>
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<th>Twelfth Quarter</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 492</td>
<td>3</td>
</tr>
<tr>
<td>Business elective</td>
<td>3</td>
</tr>
<tr>
<td>Nonbusiness Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Economics

Professors Blair, Fichtenbaum, Kumar, Premus, Renas, Sav, Swaney

Associate Professors Dung, Olson, Traynor (chair)

Assistant Professors Hopkins, Osborne

Lecturer Endres

Instructor Sylvester (director, M.S. program and Center for Economic Education)

The field of economics covers a broad range of concerns, from practical questions about how a business can improve efficiency to the more abstract study of the limits that nature imposes on human populations and natural resources. Economics aims at improving our welfare by understanding how people make decisions when faced with relative scarcity and by studying the complex relationships among the production, consumption, and distribution of material goods.

The economics program equips students to pursue careers in business and government, or prepares them for graduate study in economics, business, or law. Our graduates have achieved success as executives in a wide variety of industries and are employed as professional economists in such diverse areas as urban economics, workforce and training analysis, business forecasting, school finance consulting, evaluating health and delivery systems, budget analysis, market consulting, government planning, banking, 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 their future options and the specific skills necessary to apply economic ideas. This includes the ability to express economic ideas clearly, concisely, and grammatically. To enhance writing skills, students are required to complete 12 hours of writing-intensive courses.

Departmental faculty advisors are available to all students who need advice about formulating and reaching career goals, as well as making decisions about elective courses.
Degree Requirements—
Business Economics

Bachelor of Science in Business Degree

The program in economics requires a minimum of 189 credit hours. A minimum of 36 credit hours in economics is required.

The following program represents a recommended schedule for full-time students pursuing a four-year program. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure that they meet prerequisite requirements.

Junior Year

Seventh Quarter
EC 315 4  MIS 300 4
FIN 301 3  Nonbusiness Elective 3
MKT 301 3

Eighth Quarter
EC 317 4  MKT 302 4
FIN 302 3  EC 320 3
MGT 302 3  MGT 300 3

Ninth Quarter
EC 319 4  LAW 350 3
EC Electives* 6  Nonbusiness Elective 3

Senior Year

Tenth Quarter
EC 409 3  EC 301 3
Nonbusiness Elective 4  EC Elective* 3
MGT 490 3

Eleventh Quarter
EC Electives* 6  MGT 491 3
MS 306 3  Business Elective 3

Twelfth Quarter
EC Electives* 6  Nonbusiness Electives 4
MGT 492 3

*Economics electives include any 300- or 400-level EC classes that are not required.

Finance and
Financial Services

Professors: Aminin, Bacon (chair), Goulet, Gressis, Sweeney
Associate Professors: Ahmad, Larsen, Williams
(associate dean)
Assistant Professor: Fene
Instructor: Kane

Two majors are available: finance and financial services.

The finance major includes a core of courses that cover all aspects of the theory and practice of financial management. Financial management involves managing the financial affairs of businesses and other organizations. The curriculum includes courses in accounting, investments, working capital management, international finance, and managerial finance. Among the many job opportunities open to the finance major are capital budgeting analyst, analyst, credit analyst, financial analyst, loan officer, and financial manager.

The financial services major is designed to meet the growing need for people who are knowledgeable in all areas of personal financial management, including investments, insurance, tax planning, retirement planning, real estate, estate planning, and personal financial planning. Among the many career opportunities available to the financial services major are financial planner, stock broker, insurance agent, real estate broker, loan officer, and trust officer. Students who complete the financial services major at Wright State are eligible to sit for the Certified Financial Planner Exam. Students with an interest in both finance and accounting may wish to consider a dual major in finance and accounting. Interested students should contact an academic advisor.

Degree Requirements—
Finance

Bachelor of Science in Business Degree

The major in finance requires a minimum of 189 credit hours.

The following program represents a recommended schedule for full-time students pursuing a four-year program with a major in finance. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure that they meet prerequisite requirements.

Economics Minor

See Business Minors, page 67.
Junior Year

Seventh Quarter  
FIN 301  3  MKT 301  3  
LAW 350  3  ACC 304  3  
MKT 301  3  MGT 300  1  

Eighth Quarter  
FIN 302  3  ACC 305  3  
MGT 302  3  EC 320  3  
Ninth Quarter  
FIN 303  3  ACC 306  3  
MS 306  3  Nonbusiness Electives  6  

Senior Year

Tenth Quarter  
Business Elective  3  FIN 401  3  
FIN Elective  3  FIN 490  3  
MGT 490  3  
Eleventh Quarter  
FIN 420  3  Nonbusiness 3  
MGT 491  3  Elective 3  
Business Elective  3  Finance Elective 3  
Twelfth Quarter  
FIN Electives  6  Business Elective  2  
MGT 492  3  FIN 421  3  

* A list of approved finance electives is available from an advisor.

Degree Requirements—Financial Services

Bachelor of Science in Business Degree

The major in financial services requires a minimum of 189 credit hours.

The following represents a recommended schedule for full-time students 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 advisors to plan their schedules.

Junior Year

Seventh Quarter  
FIN 301  3  MKT 301  3  
FIN 331  3  Nonbusiness 3  
FIN 305  3  Elective 3  

Eighth Quarter  
FIN 302  3  MKT 302  4  
FIN 351  3  EC 320  3  
MKT 302  3  MGT 300  1  

Ninth Quarter  
MS 306  3  MIS 300  4  
ACC 441  3  Nonbusiness 3  
LAW 350  3  Elective 3  

Senior Year

Tenth Quarter  
FIN 401  3  MGT 490  3  
FIN 461  3  Financial Services  
MKT 366  3  Elective 3  

Eleventh Quarter  
FIN 462  3  Business Elective 3  
Financial Services Elective*  3  
MGT 491  3  

Twelfth Quarter  
FIN 463  3  Financial Services  
MGT 492  3  Elective 3  
Business Electives  6  

* A list of approved financial services electives is available from an advisor.

Insurance

See Finance and Financial Services.

International Business

This major prepares students for careers in international business. The program has an applied learning orientation that includes foreign language courses and an internship in an area of international business. The degree is interdisciplinary, combining courses in culture, foreign language, and international business. A combination of international courses is taken in each functional area of business including marketing, accountancy, finance, management, and economics.

The international business major should be selected by students who want a broad background and applied experiences for administrative careers that require competency in language, culture, and international business operations. In addition, the major provides a firm grounding in the management of organizational and institutional resources and in international issues.
Through the required internship, the major provides the opportunity to apply skills learned in the classroom to real life situations. The major also encourages study abroad opportunities to hone foreign language skills and international trade competencies.

Applied modern language courses are offered in Spanish, French, and German through the Department of Modern Languages.

The objective of the major is to enhance the awareness, understanding, and expertise of business students in a coordinated, interdisciplinary structure that ensures a unique academic opportunity. This is accomplished through:

- providing expertise in the international trade operations of international business;
- providing understanding of the interdependencies among business, culture, and language competencies for global economic effectiveness;
- developing decision making skills in planning, organizing, leading, and controlling resources in international business;
- and developing sustained and structured awareness of the international dimensions of all business functions.

### Language Placement

Students with fewer than two years of a foreign language in high school or a grade of "C" or lower are advised to enroll in FR, GER, or SPN 101, 102, 103 for credit.

Students who have studied a foreign language for two or more years and received a grade of "B" or better may not take 100-level foreign language courses for credit; they must enroll in FR, GER, or SPN 201.

Students with three or four years of high school foreign language may place themselves in FR, GER, or SPN 311 or 321.

### Degree Requirements—International Business

#### Bachelor of Science in Business Degree

The major in international business requires a minimum of 189 credit hours.

The following program represents a recommended schedule for full-time students pursuing a four-year program with a major in international business. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure that they meet prerequisite requirements.

This schedule assumes that a student may go directly into second year foreign language courses.

### Freshman Year

<table>
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<th>Course Title</th>
<th>Credits</th>
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<td>4 MTH 129</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Science I*</td>
<td>4 HST 101</td>
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<td></td>
<td>Fine Arts *</td>
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<tr>
<td>Second Quarter</td>
<td>ENG 102</td>
<td>4 MTH 228</td>
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<td></td>
<td>Science II*</td>
<td>4 HST 102</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Third Quarter</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Great Books*</td>
<td>3 CS 205</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Science III*</td>
<td>4 HST 103</td>
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</tr>
<tr>
<td></td>
<td>CST/CSE*</td>
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### Sophomore Year

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<th>Quarter</th>
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</thead>
<tbody>
<tr>
<td>First Quarter</td>
<td>ACC 201</td>
<td>3 PSY 105</td>
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<tr>
<td></td>
<td>EC 201</td>
<td>3 Foreign Language**</td>
<td>4</td>
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<td></td>
<td>MS 201</td>
<td>3 201</td>
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<td>ACC 202</td>
<td>3 PLS 200</td>
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<td></td>
<td>EC 202</td>
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<td>4</td>
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<td>3 202</td>
<td>4</td>
</tr>
<tr>
<td>Third Quarter</td>
<td>SOC 200</td>
<td>3 Foreign Language**</td>
<td>4</td>
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<td></td>
<td>EC 203</td>
<td>3 203</td>
<td>4</td>
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<tr>
<td></td>
<td>MS 203</td>
<td>3 ENG 330</td>
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### Junior Year

<table>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>First Quarter</td>
<td>MKT 301</td>
<td>3 Cultural Elective **</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>FIN 301</td>
<td>3 RST</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MGT 300</td>
<td>1</td>
<td></td>
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<tr>
<td>Second Quarter</td>
<td>MKT 302</td>
<td>3 EC 441</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>FIN 302</td>
<td>3 SPN, FR, or GER 325</td>
<td>4</td>
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<tr>
<td></td>
<td>MIS 300</td>
<td>4</td>
<td></td>
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<tr>
<td>Third Quarter</td>
<td>MS 306</td>
<td>3 EC 442</td>
<td>3</td>
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<tr>
<td></td>
<td>LAW 350</td>
<td>3 MGT 302</td>
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<td></td>
<td>MS 340</td>
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### Senior Year

<table>
<thead>
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<th>Quarter</th>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>First Quarter</td>
<td>MGT 490</td>
<td>3 BUS 481</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EC 435</td>
<td>3 Cultural Elective***</td>
<td>4</td>
</tr>
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</table>
**Degree Requirements — Management**

**Bachelor of Science in Business Degree**

The program in management requires a minimum of 189 credit hours.

The following program represents a recommended schedule for full-time students pursuing a four-year program. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure that they meet prerequisite requirements.

### Seventh Year

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Eighth Quarter</td>
<td>FIN 301</td>
<td>3</td>
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<tr>
<td></td>
<td>MGT 302</td>
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<td></td>
<td>MKT 301</td>
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### Eighth Year

<table>
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<th>Course</th>
<th>Credits</th>
</tr>
</thead>
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<td>FIN 302</td>
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<tr>
<td></td>
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<td>1</td>
</tr>
<tr>
<td></td>
<td>MS 306</td>
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### Ninth Year

<table>
<thead>
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</tr>
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<tbody>
<tr>
<td></td>
<td>MGT 321</td>
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<tr>
<td></td>
<td>EC 320</td>
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<td></td>
<td>LAW 360</td>
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### Senior Year

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<tr>
<td>Tenth Quarter</td>
<td>MS 435</td>
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<tr>
<td></td>
<td>MGT 411</td>
<td>3</td>
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<tr>
<td></td>
<td>MGT 412</td>
<td>3</td>
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<tr>
<td></td>
<td>MGT 490</td>
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### Eleventh Quarter

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>MGT 491</td>
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<tr>
<td>MGT 410</td>
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<tr>
<td>*Major Elective</td>
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### Twelfth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MGT 492</td>
<td>3</td>
</tr>
<tr>
<td>MGT 485</td>
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<tr>
<td>*Major Elective</td>
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</tr>
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</table>

*Major electives: MGT 481—Internship, MGT 480—Special Topics, MGT 475—Small Business Management, MGT 473—Conflict Resolution, MGT 474—Quality Culture. Major courses must be completed with a "C" or higher average.
Degree Requirements—
Human Resource Management

Bachelor of Science in Business Degree

The program in human resource management requires a minimum of 189 credit hours.

The following program represents a recommended schedule for full-time students pursuing a four-year program. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure that they meet prerequisite requirements.

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>MKT 301</td>
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<tr>
<td>MIS 300</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 302</td>
<td>4</td>
</tr>
<tr>
<td>MGT 300</td>
<td>1</td>
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Ninth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS 306</td>
<td>3</td>
</tr>
<tr>
<td>MGT 321</td>
<td>3</td>
</tr>
<tr>
<td>Business Elective</td>
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Senior Year

Tenth Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MGT 410</td>
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</tr>
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<td>MGT 412</td>
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</tr>
<tr>
<td>LAW 420</td>
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<tr>
<td>MGT 490</td>
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</table>

Eleventh Quarter

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MGT 491</td>
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<td>MGT 492</td>
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<tr>
<td>MGT 494</td>
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<tr>
<td>Nonbusiness Elective</td>
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Twelfth Quarter

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<tbody>
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<tr>
<td>MGT 496</td>
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</tr>
<tr>
<td>Nonbusiness Elective</td>
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Human Resource Concentration Electives

Students are required to complete four courses for one concentration:

Benefits Administration

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>FIN 305</td>
<td>FIN 452</td>
</tr>
<tr>
<td>FIN 351</td>
<td>FIN 461</td>
</tr>
<tr>
<td>MGT 481</td>
<td>MGT 480*</td>
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Training and Development

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>COM 445</td>
<td>PSY 307</td>
</tr>
<tr>
<td>COM 451</td>
<td>MGT 480*</td>
</tr>
<tr>
<td>MGT 474</td>
<td>MGT 481</td>
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Employee Relations

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>COM 343</td>
<td>MGT 473</td>
</tr>
<tr>
<td>EC 445</td>
<td>EC 352</td>
</tr>
<tr>
<td>MGT 480*</td>
<td></td>
</tr>
<tr>
<td>MGT 481</td>
<td></td>
</tr>
</tbody>
</table>

Major courses must be completed with a "C" or higher average.

* MGT 480—Topics vary; only those approved by the department will apply.

Management Minor

See Business Minors, page 67.

Management Information Systems and Operations Management

Professors: Demmy, Sanders, Xu, Yen
Associate Professors: Coleman, Polak
Assistant Professors: Denison (chair), Wang, Watson, Weinstein
Lecturers: Chesen, Lumpkin

Two majors are available: management information systems and operations management.

The management information systems major trains students for careers in information analysis, business systems design, and information systems management. The program strongly emphasizes business and organizational studies as well as information systems technology. Students in this program will study business systems analysis, business systems design, and computer programming. Other technical and business areas in the program focus on developing, implementing, and maintaining information systems in a variety of organizational settings. The program includes course work in information system design and development methodologies, data base structures, data base management systems, computer programming, and
data communications. The program also covers business fundamentals in accounting, finance, marketing, management, and management science.

Degree Requirements—Management Information Systems

Bachelor of Science in Business Degree

The program in management information systems requires a minimum of 189 credit hours. The following program represents a recommended schedule for full-time students pursuing a four-year program. Many individuals, especially part-time students, may not be able to schedule their classes as shown. However, they must complete all requirements and plan their schedule to ensure that they meet prerequisite requirements.

Freshman Year

First Quarter  17–19

<table>
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<td>Science II†</td>
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<tr>
<td>Fine Arts†</td>
<td>3</td>
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<tr>
<td>MTH 128 or 129</td>
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<tr>
<td>HST 101</td>
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Second Quarter  16

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 102</td>
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<tr>
<td>Science II†</td>
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<tr>
<td>MTH 228</td>
<td>5</td>
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<tr>
<td>HST 102</td>
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Third Quarter  15

<table>
<thead>
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<th>Course Code</th>
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<tbody>
<tr>
<td>Science III†</td>
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<tr>
<td>HST 103</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105</td>
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Sophomore Year

Fourth Quarter  16

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<thead>
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<th>Course Code</th>
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<tbody>
<tr>
<td>EC 201</td>
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<tr>
<td>Fine Arts†</td>
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</tr>
<tr>
<td>CS 208</td>
<td>4</td>
</tr>
<tr>
<td>ACC 201</td>
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Fifth Quarter  16

<table>
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<tbody>
<tr>
<td>EC 202</td>
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<tr>
<td>RST/RSE†</td>
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<tr>
<td>MS 202</td>
<td>3</td>
</tr>
<tr>
<td>ACC 202</td>
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</tr>
<tr>
<td>CS 209</td>
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Sixth Quarter  16

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<tr>
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<td>ENG 330</td>
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<tr>
<td>MIS 210</td>
<td>3</td>
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<tr>
<td>ACC 203</td>
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Seventh Quarter  16

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>MIS 321</td>
<td>3</td>
</tr>
<tr>
<td>MGT 300</td>
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</tr>
<tr>
<td>ACC 300*</td>
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Eighth Quarter  16

<table>
<thead>
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<th>Credits</th>
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<tbody>
<tr>
<td>FIN 301</td>
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<td>MGT 302</td>
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<td>MGT 302</td>
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<tr>
<td>LAW 350</td>
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<td>MIS 400</td>
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<td>MIS 322</td>
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Ninth Quarter  15

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<tbody>
<tr>
<td>FIN 302</td>
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<td>LAW 350</td>
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<tr>
<td>MIS 400</td>
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<td>MIS 323</td>
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Senior Year

Tenth Quarter  16

<table>
<thead>
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<th>Course Code</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MGT 491</td>
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</tr>
<tr>
<td>MIS Elective</td>
<td>3</td>
</tr>
<tr>
<td>CST/CSE†</td>
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Eleventh Quarter  16

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MGT 491</td>
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<td>MIS 480</td>
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Twelfth Quarter  15

<table>
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<tbody>
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<td>MIS Elective</td>
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</tr>
<tr>
<td>Elective</td>
<td>6</td>
</tr>
</tbody>
</table>

*MIS/ACC majors will be required to take ACC 321.
†Students have a choice of courses that meet general education requirements in the following areas: Fine and Performing Arts, Great Books, Comparative Studies, Regional Studies, and Natural Sciences. The chapter on General Education Requirements, on pages 50–55, lists the specific courses that meet the requirements in these areas.

MIS Electives (select 2)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 300</td>
<td>CS 214</td>
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<tr>
<td>CS 301</td>
<td>CS 225</td>
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<td>MIS 430</td>
<td>MIS 480</td>
</tr>
<tr>
<td>CEG 210</td>
<td>MIS 477</td>
</tr>
<tr>
<td>CEG 211</td>
<td>(New courses are added as technology changes. Request an updated list in 110 Rike Hall prior to completing courses.)</td>
</tr>
</tbody>
</table>

MIS Minor

See Business Minors, page 67.

Operations Management

Operations management is the discipline that plans and coordinates the production and delivery of products and services to customers all over the world. Operations professionals manage and coordinate activities in this global pipeline to ensure an effective and efficient flow of materials and information from the time a need arises until it is satisfied and beyond. Some of the many activities involved include: customer service, transportation,
purchasing, manufacturing, plant management, warehousing, materials handling, strategic planning, inventory control, and forecasting. The goal of these activities is to satisfy the need to the ultimate consumer.

Effective operation management is critical to the success of every organization. Once considered an important, behind-the-scenes activity, operations management is now recognized as a strategic tool for creating customer value and loyalty. Companies like Wal-Mart, Coca-Cola, and Nike attribute a great deal of their success to the efficient management of their global supply chains.

Operations management majors study the strategies, concepts, management tools, and analytical techniques that enable organizations to be competitive in the world economy. Broadly speaking, the curriculum has three major areas:

1. The study of basic problem solving and data analysis tools to assist the operations manager in making good decisions.
2. The study of the major strategies, tools, and concepts for managing people, materials, and production resources to deliver value to the customer.
3. The integration of the operations function into corporate strategy.

Degree Requirements—Operations Management

Bachelor of Science in Business Degree

**Freshman Year**

<table>
<thead>
<tr>
<th>First Quarter</th>
<th>14-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 101</td>
<td>4</td>
</tr>
<tr>
<td>Science I*</td>
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<tr>
<td>MTH 128 or 129</td>
<td>3-5</td>
</tr>
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<td>HST 101</td>
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<table>
<thead>
<tr>
<th>Second Quarter</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 102</td>
<td>4</td>
</tr>
<tr>
<td>Science II*</td>
<td>4</td>
</tr>
<tr>
<td>HST 102</td>
<td>3</td>
</tr>
<tr>
<td>CS 205</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Third Quarter</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science III*</td>
<td>4</td>
</tr>
<tr>
<td>HST 103</td>
<td>3</td>
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<tr>
<td>CS 206</td>
<td>4</td>
</tr>
<tr>
<td>MTH 228</td>
<td>5</td>
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**Sophomore Year**

<table>
<thead>
<tr>
<th>Fourth Quarter</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 201</td>
<td>3</td>
</tr>
<tr>
<td>MS 201</td>
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<td>SOC 200</td>
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<tr>
<td>ACC 201</td>
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</tr>
<tr>
<td>Fine Arts**</td>
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<table>
<thead>
<tr>
<th>Fifth Quarter</th>
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<td>PLS 200</td>
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**Junior Year**

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**Senior Year**

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<td>Nonbusiness</td>
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<td>Elective</td>
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**Operations Management Minor**

Students have a choice of courses that meet general education requirements in the following areas: Great Books, Fine and Performing Arts, Comparative Studies, Regional Studies, and Natural Sciences. The chapter on General Education Requirements, on pages 50-54, lists the specific courses that meet the requirements in these areas.

See Business Minors, page 67.
Marketing

Professors Carmone, Khera, Saunders, Wise (Emeritus)
Associate Professors Dovel (chair), Ping
Assistant Professor Gulas
Instructor Wick

The marketing program gives students a thorough grounding in the concepts and techniques needed to make marketing decisions in any organization. In addition to survey courses in principles of marketing and marketing management, marketing majors study consumer behavior, promotional marketing, product management, price management, services marketing, international marketing, marketing research, and marketing planning.

Marketing careers are far reaching as they touch on all components of the marketing mix—product, promotion, pricing, and channels of distribution. In turn, each of these areas offers dozens of specific job opportunities. For example, the promotional area includes careers 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. Faculty advisors will discuss specific marketing career plans with students.

For advice about specific academic programs, see an academic advisor in the dean’s office.

Degree Requirements—Marketing

Bachelor of Science in Business Degree

The program in marketing requires a minimum of 189 credit hours.

The following program represents the optimum junior- and senior-year schedule for full-time students pursuing a four-year program. See the section on Required Courses for business and administration majors on page 69 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 advisors to plan their schedules.

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<tr>
<td>MKT Elective*</td>
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</table>

*Any junior/senior marketing course not already required.

Marketing Minor

See Business Minors, page 67.
EDUCATION AND HUMAN SERVICES
Special Note Regarding Teacher Preparation Programs

Licensure Program Updates
At the time of publication, the teacher preparation programs listed in this catalog were being finalized by the faculty. There may be some changes not reflected in this catalog, such as course titles and course numbers. Please consult with the college’s Office of Student Services, 321 Millett Hall, for the current program descriptions.

As a result of recently passed legislation, state licensure programs for teachers and the nature of undergraduate majors have necessitated new programs. These programs require intensive practice and course work in reading and phonics. To ensure that you are made aware of the most current program requirements, please contact the college’s Office of Student Services, 321 Millett Hall, (937) 775-2993.

Students transferring prior college coursework may be eligible to complete Teacher Certification programs appearing in the 1995–97 WSU Undergraduate Catalog. However, the state of Ohio will no longer issue teaching certificates, by law, beginning September 2, 2002.

Eligibility for former certification programs is determined by the following factors:

- the student’s ability to be accepted in the WSU Teacher Education program,
- the space available in the programs, and
- the probability of completing all program requirements by the end of summer quarter 2002.

The probability of acceptance into former certification programs at WSU will be reduced as we approach 2002. Students beginning a certification course of study must complete their certification requirements prior to September 2, 2002. In order to meet this deadline, you must have met all of the following requirements:

- completed your program of study,
- passed Praxis II (Core PLT Battery and Speciality Area(s)),
- completed your Bureau of Criminal Identification and Investigation background/finger-print check with the results transmitted to the Ohio Department of Education, and
- had your certification application received by the Ohio Department of Education, Office of Professional Development and Licensure prior to September 2, 2002.
The College of Education and Human Services

The College of Education and Human Services assumes responsibility for one of the university’s primary functions: preparing teachers, educational leaders, and professionals in health, education, and human services. Many programs within the college lead to licensure by the Ohio Department of Education in school teaching fields. The Departments of Educational Leadership, Teacher Education, Health and Physical Education, and Human Services prepare licensed and nonlicensed leaders for public and private schools and for community agencies. These leaders include public school teachers, principals, curriculum supervisors, central office administrative specialists, school guidance counselors, personnel counselors, rehabilitation specialists, and community and mental health counselors.

The Bachelor of Science in Education degree and the Bachelor of Science degree with a major in rehabilitation are offered. The college also offers programs leading to the Master of Arts, Master of Education, Master of Rehabilitation Counseling, Master of Science, and Educational Specialist degrees.

Throughout its history, the college has maintained a close working relationship with the public schools and community agencies in the region. Frequent involvement of the College of Education and Human Services faculty in the schools and agencies of the area, and the advice and planning assistance of public school and agency personnel, serve to improve the college’s programs, the programs of community schools, and the services of community agencies.

Accreditations

The College of Education and Human Services meets the 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’s teacher education programs are accredited by the National Council for Accreditation of Teacher Education (NCATE). The college’s community and school counseling programs are accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP), and the Rehabilitation programs carry the Council on Rehabilitation Education (CORE) accreditation.

Admissions, Retention and Advising

The College of Education and Human Services follows the principle, supported by the Ohio Laws and Regulations of the State Board of Education and the accrediting agencies cited above, that the college has the right and obligation to consider personal factors, as well as academic achievement, as a basis for admitting and retaining a student in its professional programs. While academic performance is a major determinant of effective performance in a profession, it is not the only one. Because there are also skills, understanding, and personal characteristics unique to a particular profession (such as teaching), students seeking admission to the college’s programs must meet requirements in addition to those generally prescribed for enrollment in the university.

Prospective majors should see an academic advisor in the college for current admissions requirements. Information is available in the college’s Student Services Office.

Teacher Education Admissions Policies

To be considered for admission to the College of Education and Human Services Teacher Education programs in Integrated Business Education, Vocational Education, Early Childhood Education, and Health and Physical Education, students must meet the requirements listed below. (For admissions policies for Music Education, see the College of Liberal Arts.)

1. completed at least 45 academic credit hours;
2. attained at least a 2.5 cumulative GPA;
3. achieved a minimum score on each section of the Praxis I Test (PPST), and
4. submitted a completed CEHS Teacher Education Program Application packet which includes:
   a. Evidence of GPA and Praxis I score.
   b. A self assessment statement which includes the applicant’s career goals, and a signed character statement.
   c. Two letters of recommendation. Licensure applicants will need at least one letter from a faculty member or a university advisor.
   d. A writing sample of 250–500 words.
   e. Completed an interview.
Meeting these requirements does not guarantee admission to the Teacher Education Program. A student is officially admitted to the College of Education and Human Services program at the professional discretion of the faculty and staff.

All applicants for initial licensure must meet these admission requirements. All requirements are subject to NCATE and Ohio Department of Education (ODE) regulations. Application forms may be obtained from the College of Education and Human Services Student Services Office.

Middle Childhood Education (without licensure) Admissions Policy

To be considered for admission to the College of Education and Human Services Middle Childhood Education Program, students must have:

1. completed at least 45 academic credit hours,
2. attained at least a 2.5 cumulative GPA,
3. achieved a minimum score on each section of the Praxis I Exam,
4. submitted a completed CEHS Teacher Education Program Application packet which includes:
   a. Evidence of GPA and Praxis I score.
   b. A self assessment statement which includes the applicant’s career goals,
   c. An interview may be required.

Meeting requirements does not guarantee admission to the Teacher Education Program. A student is officially admitted to the College of Education and Human Services program at the professional discretion of the faculty and staff.

All applicants for initial licensure must meet these admission requirements. All requirements are subject to NCATE and Ohio Department of Education (ODE) regulations. Application forms may be obtained from the College of Education and Human Services Student Services Office.

Rehabilitation Services Admissions Policy

To be considered for admission to the College of Education and Human Services, rehabilitation services majors must have:

1. completed at least 24 academic credit hours,
2. attained at least a 2.35 cumulative GPA,
3. complete an InterUniversity Undergraduate Transfer Application.

A student is officially admitted to the College of Education and Human Services, rehabilitation services major, when these items are completed.

Upon completion of the items, the student should contact the Undergraduate Rehabilitation Services Faculty Advisor to plan a course of study.

Note: the admission policy for a rehabilitation services minor is the same as for a rehabilitation services major. Students are advised to complete an interuniversity undergraduate minor declaration form and then contact the Undergraduate Rehabilitation Services faculty advisor to plan a course of study.

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 2.5 GPA, the completion of 45 credit hours (or equivalent) of college credit, and acceptable scores on the PRAXIS I Exam for teacher education. Rehabilitation services majors need a 2.35 GPA and 24 credit hours completed.

Advising

Upon admission to the College of Education and Human Services, each student is assigned two advisors: a faculty advisor and a teacher licensure advisor. The faculty advisor supports and guides students in developing their professional goals and objectives. The teacher licensure advisor prepares an individual program of study and sends one copy to the student, and files a copy in the student’s file in the Office of Student Services. The teacher licensure advisor is available to answer questions about teacher licensure, program requirements, course prerequisites, sequences, and university and college rules and regulations. Because of the sequential nature of many courses and the prerequisites needed in both the professional and academic components of the degree programs, students are strongly urged to consult an advisor before registering. Any deviation from the specified curriculum should be discussed in detail with a teacher licensure advisor before it is undertaken. The college provides an undergraduate teacher education guidebook for all students in teacher education. This book should be studied carefully and kept with all academic records.

Undergraduate rehabilitation services majors should purchase a handbook for rehabilitation services majors in the bookstore when they take RHIB 201.

Retention

To increase their likelihood of success, students in professional degree programs must meet certain criteria, at various stages in the program, to earn recommendation for licensure and graduation. These
criteria reflect academic standards and show that the student can effectively perform responsibilities that include the ability to provide for students' safety; effectively communicate with students verbally and in writing; provide a stable, supportive environment that will promote student growth; and manage the instructional program for individuals and for small and large groups.

Faculty members, on the basis of their knowledge of students and their professional observations, evaluate students' progress in meeting these criteria and decide on whether to retain and recommend students for teacher licensure.

Students in rehabilitation services should meet with their faculty advisor throughout their course of study to discuss their career goals and future as a rehabilitation services provider.

Athletic Training

The athletic training program leads to a Bachelor of Science in Education (B.S. Ed.) degree, with or without teaching certification, and is designed to meet students' individual needs.

The certified athletic trainer is increasingly viewed as the expert in care of the physically active. Wright State University's program prepares self-directed graduates who can function in a number of settings in collaboration with other health care professionals coordinating and improving the health care of physically active individuals.

The athletic training concentration at WSU is in the process of securing accreditation from the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Graduates of the program will also be eligible for the National Athletic Trainers Association's certification examination and to apply for Ohio licensure from the Ohio OT/PT/AT Board.

As a result of recent changes at the national level, certification requirements for athletic trainers are in the process of being revised. The athletic training program is in the revision process with the goal to be accredited by CAAHEP by the fall of 2000. All undergraduates students admitted after the 1999 summer quarter will need to meet the new curriculum requirements in order to graduate.

For the most current information, please contact the Department of Health, Physical Education, and Recreation (HPR) and the Office of Athletic Training, Room 316 E. J. Nutter Center at (937) 775-3259/3223.

Athletic Training Admissions and Advising

The baccalaureate program in athletic training is a concentration within the Department of Health Physical Education and Recreation (HPR) in the College of Education and Human Services (CEHS). Admission to Wright State University does not guarantee admission to the Athletic Training concentration.

In order to become eligible to apply for admission to the athletic training program, students must be accepted as degree-seeking students at Wright State University, complete all designated prerequisites courses with a combined 2.5 GPA, and have at least a 2.5 cumulative GPA. Admission will be based upon cumulative GPA, performance on competencies, completion of field experiences, personal interview, and overall work performance. The number of students admitted is determined by the availability of resources such as field experience sites and the number of faculty/clinical instructors. All students must submit an admissions application to the athletic training program by the established deadline.

Students must earn a grade of C or better in all courses in the pre-athletic training program to progress to the athletic training program. Students must also earn a grade of C or better in each athletic training course to remain in the program.

All students must fulfill current health requirements, including immunizations (i.e., Hepatitis B) and an annual physical examination. The exam must certify that the student is in good health and able to actively participate in clinical and field experiences. Proof of a current physical and immunizations must be submitted at the time of application. Faculty may request a student's reexamination if limitations interfere with the student's clinical practice or learning.

All students are required to purchase liability (malpractice) insurance in the amount specified by the athletic training program. Applications are available in the athletic training office.

Students must provide their own transportation to all field experiences.

Degrees and Areas of Study

Please review the teacher education content preparation programs in the College of Science and Mathematics and the College of Liberal Arts. Many teaching areas require a bachelor's degree in the content area, with teacher preparation being provided on the graduate level within a master's
degree program. Examples include: Mathematics Education, Science Education (Biology, Chemistry, Physics, etc.), Modern Languages (French and Spanish), Social Studies, English, Art, etc.

The college offers curricula leading to the Bachelor of Science in Education degree in selected teaching fields and for selected age levels and/or recommendation for Ohio teacher licensure in the fields listed below. Teacher licensure in Ohio also requires passing scores on examinations mandated by the state's Department of Education.

The early childhood and middle childhood programs meet the State of Ohio Standards for Colleges and Universities preparing teachers. One of the requirements mandated by these standards is the completion of 300 practica experience hours prior to student teaching. Full-day and half-day practicum are required throughout Phase I and Phase II of the early childhood program, multiage Health and Physical Education program, and in Phase I (the undergraduate portion) of the middle childhood program and the adolescent to young adult programs.

Early Childhood Education
Pre-K–3 Program—Grades K–3, ages 0–8
Middle Childhood—Grades 4–9, ages 8–14
Multi-Age—Grades K–12
Language (French, Spanish)
Music Education (see College of Liberal Arts)
Health and Physical Education (B.S.Ed.)
Adolescent to Young Adult—Grades 7–12, ages 12–21
Ages 8 and Beyond—Grades 4 and Beyond
Integrated Business Education (B.S.Ed.)
Vocational Business Education (B.S.Ed.)
Vocational Education (B.S.Ed.)
Marketing Education (B.S.Ed.)

Rehabilitation Services
The College of Education and Human Services offers a four-year curriculum leading to a Bachelor of Science degree with a major in rehabilitation services. This program prepares students to work with people with physical and mental disabilities, but does not include teacher licensure. Students may take course work throughout their academic program which could lead to certification as a counselor assistant or case manager.

Endorsement/Validation of Standard Teaching Licenses
Curricula are available to validate standard teaching certificates in the following areas:
- Adapted Physical Education
- Adult Education—Full Time
- Kindergarten
- OWE/OWA
- Prekindergarten
- Teaching English to speakers of other languages (TESOL)
- Transition-to-Work
- Work-Site Teacher/Coordinator

Transition to Work
This endorsement is offered through the College of Education and Human Services for individuals who want to work as school vocational evaluators, vocational special education coordinators (VOSEs), job training coordinators (JTCs), or work study coordinators. Individuals interested in obtaining the transition to work endorsement should call (937) 775-3270.

Degree Requirements
Students completing the teacher preparatory program in early childhood, integrated business education, marketing education, and health and physical education earn the Bachelor of Science in Education degree. Students in the teacher preparatory program in middle childhood earn the bachelor of Science in Education degree upon completion of two teaching field concentrations and Phase I of the professional concentration; Phases II and III of the professional concentration must be taken at the graduate level; please see the sample graduate program:

Sample Graduate Program of Study
Adolescence to Young Adult: Life Earth—M.Ed.
Science/Chemistry

Term One—Taken within an undergraduate Wright State program
ED 301 Schooling in a Culturally Diverse Society 4
ED 303 Human Development and Learning 3
EDS 333 Learning differences: Introduction 3
ED 221, 223 Practicum 1 2
Term Two
ED 645 Assessment 3
ED 622 Technological Instruction and Integrated Methods 3
ED 646 Inquiry and Prospectus 1–3

Term Three
CNL 662 Problems in Student Personality and Development 4
EDS 659 Communication and Consultation Skills for Special Educators 3
ED 635 Secondary Issues and Leadership 3
ED 600 Classroom Management 3
ED 614 Practicum II 1

Term Four
ED 631 Expanding Literacy Skills through Adolescence 3
ED 616 Practicum III 1
ED 731 Middle Childhood and Adolescent School Science: Methods, Curriculum, and Materials 3

Term Five
ED 651 Internship Adolescence 12
Finish ED 646, 622
ED 771 Intern project seminar taken when project is completed.

Minimum Total 45

The program leading to the Bachelor of Science degree with a major in rehabilitation services prepares students to work with people with disabilities, public offenders, or people who are disadvantaged.

General Degree Requirements
1. Completion of a minimum of 183 credit hours
2. Fulfillment of university General Education requirements
3. An overall cumulative GPA of 2.5 or higher for teacher education and 2.35 for rehabilitation services
4. Satisfactory completion of all required professional field, practica experiences, or student teaching.

Specific Requirements

Middle Childhood (Grades 4–8, Ages 8–14)
1. General requirements listed previously
2. Of the 192–194 hours required for graduation, a minimum of 15 quarter hours in professional education
3. Fulfillment of requirements established in one or more major teaching fields with a 2.5 GPA in each field
4. This program does not result in State Licensure at this level, additional graduate work is required.

Rehabilitation Services
(preparation for work with people with disabilities)
1. General requirements listed previously
2. Completion of prescribed pattern of courses.

Pre-Athletic Training Program
All students interested in athletic training will be admitted to the university as pre-athletic training students. Most new students will be advised in the University College. The Pre-Athletic Training Program has two levels. The requirements for each are as follows:

Level 1:
1. Completion of ATR 261 and ATR 284 with a grade of B or better
2. Above average evaluations in field experiences by clinical faculty
3. Personal interview with staff athletic trainers
Students may seek provisional acceptance into the Athletic Training Program if conditions 1–3 are met and the following prerequisites are completed:
   a. chemistry
   b. anatomy and physiology
   c. biology
   d. physics
These courses may be completed during high school or college.

Level 2:
1. Enrollment in the following courses:
   a. winter: ATR 303 and 285
   b. spring: ATR 262 and 286

Athletic Training Program
Students may seek admission to the Athletic Training Program after meeting the following requirements:
1. Complete 45 quarter hours
2. Maintain a cumulative GPA of 2.5 or higher
3. Complete all prerequisite courses with a minimum grade of B (i.e., ATR 261, ATR 284, ATR 303, ATR 285, ATR 262, ATR 286, HED 230, HPR 362)

4. Admission to the College of Education and Human Services and Teacher Education Program (if applicable) by the established deadline.

5. Submit application to athletic training program by the established deadline

6. Submit three letters of recommendation indicating applicant's human relations skills and academic potential.

7. Submit a written statement of 250 words describing the applicant's life experiences.

After completing 1-7 above, all materials are reviewed by the Athletic Training staff. To remain in good standing, the student must maintain a cumulative GPA of 2.5. In addition, the student must demonstrate commitment to the program and competence in athletic training knowledge and practical skills.

Education Honors Program

Outstanding students enrolled in programs in the Department of Teacher Education have an opportunity to complete the University Honors Program or an honors program in education. This program provides students with 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 Teacher Education are eligible for the honors program if they have maintained a 3.0 overall cumulative GPA, 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 a licensure advisor.

Recommendation for Licensure

Every teacher in Ohio public schools is required to be licensed in the field or fields in which he or she is teaching. This license is issued by the Ohio Department of Education upon the recommendation of the College of Education and Human Services. Students may apply for licensure in the College of Education and Human Services Office of Student Services during the last quarter of their professional undergraduate programs. (Note: Many programs require graduate level study for licensure.)

A candidate for teaching licensure at Wright State University must be deemed to be of good moral character, have successfully completed the approved program of teacher preparation, obtained passing scores on the Praxis II exam, and be recommended by the dean of the College of Education and Human Services. Finger printing and a background check are also required for all applicants to receive an initial license.

"Good moral character" is defined as not having pleaded guilty to or not having been convicted of any felony, any violation of Section 2907.04 (Corruption of a Minor), Section 2907.06 (Sexual Imposition), or Division (A) or (C) of Section 2907.07 (Importuning) of the Revised Code, any offense of violence, theft offense, or drug abuse offense that is not a minor misdemeanor, or any substantively comparable ordinance of a municipal corporation or of another state. An individual who has pleaded guilty to or has been convicted of any such offense may have an application for licensure considered by the State Board of Education, provided the individual meets the conditions specified in rule 3301-23-23 of the Administrative Code.

Licensure of Students From Other Colleges Within the University

Students who receive degrees from other colleges within the university may also wish to obtain teaching licenses. They are subject to the same admission requirements as described on pages 83 and 84. Recommendation for licensure will occur only after a student satisfactorily completes all of the requirements of the College of Education and Human Services. These include admission, selective retention, the major teaching field and related requirements, the professional and Phase I professional courses, completion of professional courses at the graduate level, and a passing score on the Praxis II exam.

Licensure for Holders of Nonprofessional Degrees

Students who are graduates of other accredited colleges or universities are subject to the same requirements as described on pages 83 and 84. In addition, the Office of Student Services in the College of Education and Human Services helps those seeking licensure in the teaching profession by providing evaluations of college transcripts. This service is provided for:
1. Currently enrolled WSU students
2. WSU alumni who have been previously certified and seek to obtain additional endorsements
3. Candidates who have applied for admission to WSU
4. Persons seeking additional and/or renewal of certification who have not previously attended WSU, but reside in the metropolitan area served by WSU
5. Residents of the metropolitan area seeking information on initial licensure
6. Persons who have been previously licensed in the State of Ohio, and whose course work was primarily taken at a State of Ohio institution
7. Persons who have been previously licensed and seek renewal and/or additional endorsements, but reside outside the metropolitan area served by WSU (exception for WSU alumni)
8. Persons who reside out of state and have not been previously licensed
9. Non-U.S. citizens or residents who reside outside the United States and seek a non-immigrant visa for the purpose of study (F-1, J-1 visas)
10. International inquiries from non-U.S. citizens or residents whose course work has primarily been at foreign institutions*

Transcript evaluation results are not official and are subject to review at the time of admission to the College of Education and Human Services. Evaluation results are valid for one calendar year. If an updated evaluation is required by the client, an additional request form must be completed and the appropriate fee paid.

Clients falling under the 4-10 categories will be assessed a nonrefundable $25 fee for each area of licensure requested.

For more information, contact the College of Education and Human Services, Office of Student Services, 321 Millett Hall, 775-3088.

*International students should first consult with the Office of Student Services.

Student Organizations

The following organizations are available to students of the College of Education and Human Services:

- Business Professionals of America is a national student organization composed of state association and local chapters serving persons pursuing careers in business and office occupations. This organization provides the opportunity for the development of leadership skills, personal and professional growth, and career-related competencies.
- Graduate students majoring in one of the college's counseling programs can be invited to join Chi Sigma's Iota; an international honors society for the counseling professional.
- Kappa Delta Pi is an international honor society in education. Individuals are invited to become members of the society by vote of the chapter, because of high academic achievement and because they have exhibited a professional attitude indicating their ability to grow in the field of education.
- Ohio Student Education Association (OSEA) is a preservice organization for all students, graduate or undergraduate, who are interested in education. The primary purpose is to further professional interest in education and to provide opportunities to meet socially with other students of similar interests.
- The student Rehabilitation Club provides rehabilitation majors with opportunities to explore topics in the field as well as offering social interaction.
- Students Council for Exceptional Children (SCEC), an affiliate of the International Council for Exceptional Children, is an organization for people interested in service for the exceptional learners, including rehabilitation counselors and special education teachers.

School Nurse Licensure Program

The School Nurse Licensure program is offered as a graduate program. The 22-credit, graduate-level program leads to endorsement for licensure as a school nurse in the State of Ohio.

Prerequisites:

1. Baccalaureate degree with course work in growth and development, psychology, sociology, and/or anthropology.
2. License to practice professional nursing in the State of Ohio.
3. Course work in community health.

For more information, refer to the School of Nursing 775-3131 or the Department of Health, Physical Education, and Recreation 775-3223.
Athletic Training

Special Program Note
As a result of recent changes at the national level, certification requirements for athletic trainers are in the process of being revised. The athletic training program is in the revision process with the goal to be accredited by the Commission on Accreditation for Allied Health Programs (CAAHEP) by the fall of 2000. All undergraduate students admitted after the 1996 summer quarter will need to meet the new curriculum requirements in order to graduate. For the most current information, please contact the Department of Health, Physical Education, and Recreation (HPR) and the office of Athletic Training. Room 316 E. J. Nutter Center or call (937) 775-3259/3223.

Biological Sciences Education

See Biological Science Education programs in the College of Science and Mathematics.

Business Education: Integrated

The Integrated Business Education Comprehensive Licensure program leads to the Bachelor of Science in Education degree and state licensure. The program is designed to prepare outstanding teaching professionals in business education by offering a balanced program combining general education, professional education, and business content. The provisional vocational license in business education in Ohio is valid for teaching business subjects to learners ages eight and beyond and grades four and beyond.

Degree Requirements—Integrated Business Education

Bachelor of Science in Education Degree

Professional Education Requirements 28-42
ED 221, 223, 301, 303, 321, 323, 327, 429, 432, 440
EDS 333

Related Courses 6
COM 101
EDT 280

Business Education Content Requirements 123-126
ACC 201, 202
CEG 210
CS 141, 142, 214
EC 201, 202, 203
EDT 204, 206, 207, 208, 209, 211, 212, 220, 221, 222, 230, 306, 335, 433, 434, 440
ENG 330
LAW 350
MGT 302
MKT 301, 302, 421
MTH 127
VEO 401, 406, 407, 421, 426, 431, 465, 469

Total (minimum requirement) 211-228

Degree Requirements—Integrated Business Education Without Business Information Systems

The Integrated Business Education Without Business Information Systems Licensure program leads to the Bachelor of Science in Education degree and state licensure. The program is designed to prepare outstanding teaching professionals in marketing education by offering a balanced program combining general education, professional education, and business content. The provisional vocational license in business education in Ohio is valid for teaching business subjects to learners ages eight and beyond and grades four and beyond.

Bachelor of Science in Education Degree

Professional Education Requirements 28-42
ED 221, 223, 301, 303, 321, 323, 327, 429, 432, 440
EDS 333

Related Courses 6
COM 101
EDT 280

Business Education Content Requirements 104-107
ACC 201, 202
EC 201, 202, 203
EDT 204, 206, 207, 208, 209, 211, 212, 220, 221, 222, 305, 306, 335, 433, 434, 440
Chemistry Education

See Life Sciences/Chemistry and Earth Sciences/Chemistry Education programs in the College of Science and Mathematics.

Early Childhood Education

Pre-K–3 Program

The Pre-K–3 licensure program prepares students to teach children three years of age through grade three. The Pre-K–3 license qualifies you for employment in day care, nursery school, headstart, public and private preschools, and primary (K–3) elementary grades. Students will be required to work with children from birth through third grade in Phases 1, 2, and 3. The program offers courses in general education, professional education, and content curriculum.

Degree Requirements—Early Childhood Education (Pre-K–3, Ages 0–8)

General Education 46

*Area One: Process of Writing*
ENG 101, 102 Effective Written Discourse 8
MTH 143 Quantitative Reasoning 4

*Area Two:*
HST 101, 102, 103 The Western World 9
Great Books (Choose one):
ENG 204 Literature
PHL 204 Philosophy
REL 204 Bible and Western Culture

Fine and Performing Arts (Choose one): 3
ART 214 Visual Art
MUS 214 Music
TH 214 Theatre

*Area Three*
Comparative studies (CST) (Choose one): 3
222 Northwestern Environments
230 Northwestern World Views
240 Northwestern Culture
250 Northwestern Social Systems
Regional Studies (RST) (Choose one):
260 Asia
280 Latin America
270 Africa
290 Middle East

*Area IV:*
EC 200 Economic Life
POL 200 Political Life
PSY 205 Psychology: Science of Behavior
SOC 200 Social Life

Professional Education 86–88

Junior Year

*Phase I—First Quarter*
EDE 300 Schooling in a Culturally Diverse Society 3
EDE 301 Human Growth and Development: Pre-natal through Early Childhood
EDE 221 Practicum Experience I (Co-requisites: EDE 300 and 301) 1
EDE 230 Introduction to Early Childhood Education 3
EDE 315 Young Children with Special Needs 3
EDE 223 Practicum Experience II (Co-requisites: EDE 230 and 315) 1

*Phase I—Second Quarter*
EDE 231 Developmentally Appropriate Programming in Early Childhood: Infants and Toddlers
EDE 303 Social Development and Play in ECE 3
EDE 307 Language Development and Communication Disorders in ECE 3
EDE 225 Practicum Experience III (Co-requisites: EDE 231, 303, and 307) 1
ED 407 Instruction in Word Study: Phonics 5

Senior Year

*Phase I—Third Quarter*
EDE 464 Evaluation and Assessment in Early Childhood 3
EDE 302 Positive Guidance and Discipline in ECE 3
EDE 227 Practicum IV (Co-requisites: EDE 302 and 464) 1
ED 315 Early Childhood Children's Literature: Curriculum and Materials 3
ED 327 Teaching Skills 3

*Phase II—First Quarter*
ED 316 Early Childhood Language Arts: Curriculum and Materials 3
ED 317 Early Childhood Reading: Curriculum and Materials 3
ED 417 Early Childhood Social Studies: Curriculum and Materials 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EDE 321</td>
<td>Practicum Experience V (Co-requisites: ED 316, 317, and 417)</td>
<td>1</td>
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<tr>
<td>EDS 459</td>
<td>Communication and Consultation Skills for Special Educators</td>
<td>3</td>
</tr>
<tr>
<td>EDE 401</td>
<td>Family and Community in Early Childhood</td>
<td>3</td>
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<tr>
<td><strong>Phase II</strong></td>
<td></td>
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</tr>
<tr>
<td>ED 411</td>
<td>Early Childhood Mathematics: Philosophy, Curriculum, and Materials</td>
<td>4</td>
</tr>
<tr>
<td>ED 311</td>
<td>Early Childhood Science: Philosophy, Curriculum, and Materials</td>
<td>4</td>
</tr>
<tr>
<td>EDE 317</td>
<td>Meeting the Individual Needs of Young Children</td>
<td>3</td>
</tr>
<tr>
<td>EDE 323</td>
<td>Practicum Experience VI (Co-requisites: ED 311, 411, and EDE 317)</td>
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</tr>
<tr>
<td>ED 427</td>
<td>French and Spanish Children's Literature, Music, and Art</td>
<td>3</td>
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<tr>
<td><strong>Phase III</strong></td>
<td></td>
<td></td>
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<tr>
<td>EDE 419</td>
<td>Student Teaching in Early Childhood</td>
<td>10-12</td>
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<tr>
<td>EDE 440</td>
<td>The Professional Early Childhood Educator</td>
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<td><strong>Total</strong></td>
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<td>192-194</td>
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</table>

Final recommendation for licensure requires satisfactory completion of Praxis II examinations.

**Curriculum Content**

- **AED 431 The Arts and the Child** 4
- **COM 103 Communication for Teachers** 3
- **EDT 280 Classroom Applications of Computer-Based Technology** 3
- **GEO 201, 202, or 203 Principles of Physical/Cultural/Economic Geography** 3
- **HED 331 Health Education for Early and Middle Childhood** 4
- **HPR 281 Physical Education for Early and Middle Childhood** 4
- **HST 211 and 212 American Civilization** 6
- **MTH 243 and 244 Fundamentals of Mathematics I and II** 8
- **MUS 365 Methods and Materials for Teaching General Music** 4
- **SM 145 Foundations in Scientific Literacy and Problem Solving** 3
- **PHY 245 Concepts in Physics** 4.5
- **CHM 245 Concepts in Chemistry** 4.5
- **BIO 345 Concepts in Biology** 4.5
- **GL 345 Concepts in Geology** 4.5

*Meets General Education science requirements

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**Economics Education**

See Social Science Education in the College of Liberal Arts.

**English Education**

See Integrated Language Arts/English Education in the College of Liberal Arts.

**General Science Education**

See Integrated Science Education in the College of Science and Mathematics.

**Health and Physical Education Multi-Age**

**Degree Requirements—Health and Physical Education (Multi-Age, Pre-K–12, Ages 3–21)**

**Bachelor of Science in Education Degree**

**General Education Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required substitutions:</td>
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<tr>
<td>BIO 105, HPR 250, 251</td>
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<tr>
<td><strong>Professional Education Requirements</strong></td>
<td>33</td>
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<tr>
<td><strong>Phase I</strong></td>
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<tr>
<td>ED 221, 301, 303</td>
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<td><strong>Phase II</strong></td>
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<td>ED 223, HPR 381, HED 382</td>
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<tr>
<td><strong>Phase III</strong></td>
<td>13-15</td>
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<tr>
<td>ED 429, 440</td>
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<tr>
<td><strong>Technology Communication</strong></td>
<td>6</td>
</tr>
<tr>
<td>COM 101</td>
<td>3</td>
</tr>
<tr>
<td>EDT 280</td>
<td>3</td>
</tr>
</tbody>
</table>

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**Earth Science Education**

See Geological Sciences Education and Physics Education in the College of Science and Mathematics.
Marketing Education

The Marketing Education program leads to the Bachelor of Science in Education degree and state licensure. The program is designed to prepare outstanding teaching professionals in marketing education by offering a balanced program combining general education, professional education, and marketing content. The provisional vocational license in marketing education in Ohio is valid for teaching marketing subjects to learners ages eight and beyond and grades four and beyond.

Degree Requirements—Marketing Education

Bachelor of Science in Education Degree

General Education Requirements 54

Professional Education Requirements 28–42

ED 221, 223, 301, 303, 321, 323, 327, 429, 432, 440

EDS 333

Curriculum Content 104–107

Mathematics Education

See Mathematics Education Program in the College of Science and Mathematics.

History Education

See Social Science Education in the College of Liberal Arts.
Modern Languages Education

See Modern Languages in the College of Liberal Arts.

Middle Childhood Education

Pre-Professional Program Middle Childhood B.S.Ed. degree without licensure

Degree Requirements — Middle Childhood Education Grades 4-8

General Education Requirements 46

Area One:
- ENG 101, 102 Freshman Composition 8
- MTH 143 Quantitative Reasoning 4

Area Two:
- HST 101, 102, 103 The Western World 9
- Great Books 3
- ENG 204 Literature 3
- Fine and Performing Arts (Choose one):
  - ART 214 Visual Art, MUS 214 Music, TH 214 Theatre 3

Area Three:
- Comparative Studies 3
- CST 230 Nonwestern Literature 3
- Regional Studies (RST) (Choose one):
  - 260 Asia, 270 Africa, 280 Latin America, 290 Middle East 3
  *Social Studies Concentration: Must choose RST 260 3

Area Four:
- EC 200 Economic Life 3
- PLS 200 Political Life 3
- PSY 105 Psychology: Science of Behavior 4
- SOC 200 Social Life 3

Curriculum Content 76

- AED 431 Art and the Child 4
- COM 103 Communication for Teachers 3
- COM 152 Mass Communication 3
- ED 421 Literature for Middle Childhood 3
- EDT 280 Classroom Applications of Computer-Based Technology 3

- ENG 340 Language for Teachers 3
- ENG 342 Advanced Composition for Teachers 3
- GEO 201 or 202 or 203 Principles of Physical/Cultural/Economic Geography 3
- HED 331 Health Education for Early and Middle Childhood 4
- HPR 260 First Aid 3
- HPR 281 Physical Education for Early and Middle Childhood 4
- HST 211 and 212 American Civilization 6
- MTH 243 and 244 Fundamentals of Mathematics I and II 8
- MUS 365 Methods and Materials for Teaching General Music 4

Concentrations 49-52

You must choose two of the four concentrations and complete all courses listed under the heading.

- English/Language Arts 26
  - ENG 205 African American Literature 3
  - ENG 211 Introduction to Fiction 3
  - ENG 303 Short Story Writing or 330 Business Writing or 344 Research Writing 4
  - Choose two American Texts:
    - ENG 355 Earlier 19th Century, ENG 356 Later 19th Century, ENG 357 20th Century 8
    - ENG 482 Grammatical Structures of English 4
    - COM 365 Issues in Mass Communication 4

- Math 24
  - MTH 343 Algebra and Functions for Middle School Teachers 4
  - MTH 344 Problem Solving for Middle School Teachers 4
  - MTH 345 Geometry for Middle School Teachers 4
  - MTH 348 Concepts in Calculus for Middle School Teachers 4
  - MTH 446 Mathematical Modeling for Middle School Teachers 4
  - STT 342 Probability and Statistics for Middle School Teachers 4

- Social Studies 25
  - HST 214 or 215 African American History 3
  - HST 218 or 219 Ohio History 3
  - HST 445 or 455 or 465 Nonwestern History 4
  - HST 470 or 475 or 480 or 485 United States History 4
  - Choose one government course:
    - PLS 212, 222, 322, 331, 340, 351, or 371 4
    - GEO 149 Global Awareness through Map Study or GEO 201 or 202 or 203 Principles of Physical/Cultural/Economic Geography (Must be a different course than the one chosen to meet content requirements) 4
  - Any four or more hours from the following:
    - GEO 325, 370, 375, EC 201, 202, 203 4

- Science 26

- New courses in the sciences are currently being developed for this program. Students will take four hours in each discipline.
Rehabilitation Services

The rehabilitation services program trains graduates to work in human services agencies that serve people with physical and mental disabilities. The program also prepares students for graduate study in rehabilitation counseling or related areas. Curriculum flexibility attracts students who are interested in modifying a program to reflect their special interests. Students must have a 2.35 GPA for admission to the program, and must earn a minimum grade of C in each professional rehabilitation course requirement. All students must complete a 400 clock hour practicum. Prerequisites for the practicum include an overall 2.5 GPA, plus specific rehabilitation courses necessary for preparing the student to complete the field experience. (See course description for more detailed information.)

Degree Requirements—Rehabilitation Services*

Bachelor of Science Degree

General Education Requirements

Area Four — Natural Sciences
Select BIO 105, 106, 107

Professional Rehabilitation Requirements

RHB 201, 202, 301, 303, 304
RHB 401, 402, 403, 404, 407
CNL 461, 467

Related Requirements

MGT 200 3
Sociology/Anthropology 16
Psychology (Must Include PSY 311) 16
COM 101, 102, 141 9

Electives 35

Suggested electives could include:
RHB 101, 102, 103, 305; CNL 463, 464
Other electives should be taken in an area in which the student desires to specialize/concentrate.

Total 192

*An articulation agreement exists with Sinclair Community College, Clark State Community College, Edison State Community College, and Owens Community College. Graduates of these colleges in the mental health/social services program may apply many of their previous courses to the rehabilitation services program, Bachelor of Science degree.
Minor in Rehabilitation Services

The minor in rehabilitation services requires 34 credit hours: RHB 201, 301, 303, 304, 401, 402, 403 (6 credit hours), 407. Rehabilitation minors must meet the same GPA requirements for admission to the program and completion of practicum as rehabilitation services majors.

Science Education

See Integrated Science Education in the College of Science and Mathematics.

Social Studies Education

See Social Science Education in the College of Liberal Arts.

Visual Arts Education

See Art and Art History in the College of Liberal Arts.

Vocational Education

The vocational education program prepares teachers from business and industry to teach in one of the five service areas taxonomies. A balanced program of general education, professional education, and study of vocational topics leads to a Bachelor of Science in education degree. Vocational licensure can be earned when the candidate has technical course work and recent related work experience. Certification in other areas can be obtained with a dual major option. Teachers who have completed the vocational education 39–42 quarter hour alternative licensure program may apply those hours toward the bachelor’s degree.

Option I—Intensive Vocational Major

This option is for practicing certificated-licensed vocational teachers who completed or are currently enrolled in the 39–42 quarter hour vocational preservice program and who are seeking a Bachelor of Science in education. No other licensure will be earned.

Bachelor of Science in Education Degree

General Education Requirements 60

Preprofessional and Professional

<table>
<thead>
<tr>
<th>Education Requirements</th>
<th>41–45</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 301, 303, EDS 333</td>
<td>13</td>
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<tr>
<td>EDT 280</td>
<td>3</td>
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<tr>
<td>VOE 431, 471, 472, 473, 474, 475, 476, 477, 478</td>
<td>24</td>
</tr>
<tr>
<td>VOE 479</td>
<td>3–6</td>
</tr>
<tr>
<td>ED 458</td>
<td>1–9</td>
</tr>
</tbody>
</table>

Vocational Courses 85

All of the following courses must be taken:

VOE 406, 410, 411, 455, 456, 458 18
OA 210 4
CS 205 4

Choose from the following to complete major*:


Total (minimum requirement) 192

*VOE 471 may be substituted for VOE 460, 461, 462.
Note: NOCTI test and technical course work may fulfill partial requirements for vocational credits.

Option II—Dual Certification

This option is for practicing certificated-licensed vocational teachers who completed or are currently enrolled in the 39–42 quarter hour vocational preservice program and who are seeking a Bachelor of Science in education and licensure in another teaching area in secondary education. Approximately 45 hours in a second teaching area must be completed to meet licensure requirements.

Bachelor of Science in Education Degree

General Education Requirements 60

Preprofessional and Professional

<table>
<thead>
<tr>
<th>Education Requirements</th>
<th>47</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 301, 303, EDS 333</td>
<td>13</td>
</tr>
<tr>
<td>EDT 280</td>
<td>3</td>
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<tr>
<td>VOE 431, 471, 472, 473, 474, 475, 476, 477, 478</td>
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</tr>
<tr>
<td>VOE 479</td>
<td>3–6</td>
</tr>
<tr>
<td>ED 458</td>
<td>1–9</td>
</tr>
</tbody>
</table>
Vocational Courses

All of the following courses must be taken:

- VOE 455, 456, 458, 406, 410, 411
- OA 210
- CS 205

Choose from the following to complete major:*  


Total (minimum requirement) 192

*VOE 471 may be substituted for VOE 460, 461, 462.

Note: NOCTI test and technical course work may fulfill partial requirements for vocational credits.

Option III—Degree with Technical Minor

This degree is for those students who complete a major (45 hours) in a trade, industrial, health, or technical field who seek a Bachelor of Science in education and vocational licensure in the specific area of the technical major. These students must also meet all other degree requirements and have two-years recent related work experience to meet licensure requirements.

Bachelor of Science in Education Degree

General Education Requirements 60

Preprofessional Education Requirements 42

- VOE 402, 403, 404, 405, 411, 431, 460, 461, 462, 466
- VOE 429
- EDT 280
- ED 301, 303, EDS 333

Vocational Courses*

All of the following courses must be taken:

- VOE 406, 410, 455, 458
- OA 210
- CS 205

Choose from the following to complete major: 68

- EDT 436

Total (minimum requirement) 192

*A technical major of at least 45 credit hours can be used in the vocational block to complete the content major in vocational education.

Note: NOCTI test and technical course work may fulfill partial requirements for vocational credits.
ENGINEERING AND
COMPUTER SCIENCE
The College of Engineering and Computer Science offers eight undergraduate degree programs to prepare students for professional careers. The seven engineering programs are accredited by the Accreditation Board for Engineering and Technology (ABET). The computer science program is accredited by the Computing Sciences Accreditation Board (CSAB). The programs of study are regularly updated, so students can take advantage of the latest technological advances.

The college is committed to providing an outstanding professional education to its students. This is accomplished by excellence in teaching, research, and service, and by collaborating with business and industry. As part of its commitment to collaborating with industry, the college is dedicated to developing programs important to the region and to making its programs and courses available to part-time and working students.

The undergraduate programs are intended to produce engineers and computer scientists prepared for entry into professional practice, or graduate study. The programs provide an understanding of basic science and engineering fundamentals as well as modern professional practice, and also provide good, practical, hands-on experience obtained from a strong laboratory program and real world problem solving. In particular, the college graduates will have:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to identify, formulate, and solve engineering and science problems as appropriate to the discipline
- An ability to design and conduct experiments as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs
- An ability to use techniques, skills, and modern tools necessary for professional practice
- An ability to function on multidisciplinary teams
- An ability to communicate effectively
- An understanding of professional and ethical responsibility
- A knowledge of contemporary issues
- The broad education necessary to understand the impact of engineering and scientific solutions in a global and societal context
- A recognition of the need for, and an ability to engage in, lifelong learning

The college offers master’s degrees in engineering and computer science. The college also offers a Ph.D. program in engineering and a Ph.D. program in computer science and engineering.

Students have access to modern laboratories and a wide range of computer systems interconnected by local and wide-area networks. Equipment includes numerous Sun, DEC, and Silicon Graphics file servers and workstations as well as X-windowing terminals and personal computers. Access is also available to the Ohio Supercomputer through the Ohio Academic and Research Network (OARNet).

Admission and Advising

All students interested in earning a degree through the college should apply to Wright State University through the Office of Undergraduate Admissions. When applying, students should indicate their preferred major within the college, if known.

New students are usually assigned to the University College for academic advising. Admission to a degree program in the college is subject to the student’s:

1. completing at least 45 quarter credits of college-level work.
2. attaining a cumulative GPA of at least 2.25. Computer science students must attain a cumulative GPA of 2.25 in all computer science and computer engineering courses.
3. completing required core courses in English composition, mathematics, computer programming, and chemistry or physics with a grade of C or better in each course.

Students are required to complete the program of study that is in effect at the time of their admission to the college. When they are admitted
to a degree program in the college, students are
assigned an academic advisor in the appropriate
department. Students should consult with their
advisor when first planning their program of study
and then at least once a year thereafter to be sure
they are following a logical schedule toward
graduation.

Transfer students seeking admission to a degree
program must have transfer credit equivalent to the
first-year requirements for the program and must
meet the requirements listed above. Transfer
students who do not meet these requirements
will be assigned to the University College or to
a preengineering or precomputer science program
for academic advising.

Students who return to Wright State University
after being absent for four or more quarters must
reapply for admission and satisfy the same
admission requirements listed above for new Wright
State students. These returning students may be
required to complete the program requirements that
are in effect at the time of their readmission to the
college. Their academic records will be reviewed by
an advisor who will decide where they will be
assigned for academic advising.

Degrees and
Areas of Study

Bachelor of Science degrees are offered in
biomedical engineering, computer engineering,
computer science, electrical engineering,
engineering physics, human factors engineering,
materials science and engineering, and mechanical
engineering. Minors are offered in computing and
information technology, computer science for
engineers and scientists, and materials science and
engineering.

Graduation Requirements

To be eligible for the Bachelor of Science
degree, students must:
1. complete all of the requirements in one
   of the college’s degree programs.
2. fulfill the university’s General Education
   requirements.
3. complete the residency requirement of 45 credit
   hours at Wright State University, 30 of which
   must be earned in courses numbered 300 or
   above. At least 15 of the last 45 hours of the
degree must be taken in residence.
4. complete all academic work with at least a 2.0
   cumulative GPA and at least a 2.0 cumulative
   GPA in all engineering and computer science
courses taken at Wright State University.

Students should meet with their academic
advisor before their last quarter to be sure they
will complete all requirements for graduation.

Honors Program

Honors programs are available in all
departments. These honors programs give well-
qualified students the opportunity to engage in
advanced course work and carry out independent
research projects. Students who are interested in an
honors program should consult with the chair of the
appropriate department. Honors are awarded at
graduation.

Cooperative Education

Cooperative education programs are available
in all departments. These programs permit students
to gain work experience that is relevant to their
academic programs. Interested students should
contact the Cooperative Education office.

Student
Organizations

The college and its departments sponsor a wide
variety of student clubs. Involvement in these clubs
allows students to develop closer ties with faculty
and other students in the same major. It also gives
them the opportunity to work in study groups, join
professional organizations, gain career information,
participate in professional seminars and tours, and
attend social activities.

Clubs available to students are the American
Institute for Aeronautics and Astronautics (AIAA),
American Society of Mechanical Engineers
(ASME), American Society of Metals International
(ASM), Association for Computing Machinery
(ACM), Biomedical Engineering Society (BMES),
Human Factors and Ergonomics Society (HFES),
Institute of Electrical and Electronics Engineers
(IEEE), Institute of Electrical and Electronics
Engineers Computer Society (IEEECS), National
Society of Black Engineers (NSBE), Ohio Society
of Professional Engineers (OSPE), Society of
Automotive Engineers (SAE), Society of Women
Engineers (SWE), and the Wright Engineering
Council (WEC). The Wright Engineering Council
promotes communication and cooperation among
all of the college clubs and fosters professional and
social growth. A college-wide club fair is held
annually in the fall to encourage membership.
Students may contact the departments or the college
office for information on joining any of the clubs.
The college also sponsors the Ohio Mu chapter of the Tau Beta Pi national engineering honor society. Student membership in Tau Beta Pi is based on high academic achievement.

Biomedical and Human Factors Engineering

Professors: Hangartner, He, Koube (chair), Phillips, Rowley
Associate Professors: Gallimore, Reynolds
Assistant Professors: Narayanan, Zhang

The Department of Biomedical and Human Factors Engineering offers undergraduate programs in biomedical engineering and human factors engineering leading to the degrees of Bachelor of Science in Biomedical Engineering or Bachelor of Science in Human Factors Engineering. These two engineering programs are accredited by the Accreditation Board for Engineering and Technology (ABET).

Curriculum design changes occasionally to meet educational and accreditation needs. The following curricula are typical; however, students should check with the department for current curriculum guides.

Biomedical Engineering

Biomedical engineering is concerned with solving and understanding problems in biology and medicine using principles, methods, and approaches drawn from engineering science and technology.

Biomedical engineering students, working in modern teaching laboratories structured around computer-based engineering work stations, receive intensive academic training in engineering design and analysis principles as well as life science concepts. The senior design course brings all of the course work to bear on actual biomedical engineering problems that help prepare students for employment.

The curriculum provides a mix of courses in engineering, life sciences, math, physical science, electronics, control systems, mechanics, and computers, while also stressing communication skills and general education.

Biomedical Engineering Program Objectives

- Provide opportunities to learn the concepts of basic science, biology, and engineering as they apply to the discipline of biomedical engineering.
- Provide exposure to the relationships between human/animal systems and basic-science/engineering principles.
- Provide opportunities to develop experimental, analytical, computational, and communicative skills.
- Provide exposure to the principles of some methods and instruments used in diagnosis and therapy of living systems.
- Provide awareness of the multifaceted societal environment with its local and global implications.
- Prepare students for employment as biomedical engineers, for admission to medical school, or for admission to graduate school.

Current efforts in biomedical engineering include developing medical and surgical instrumentation, designing rehabilitation assistive devices, interfacing complex systems in data collection and analysis, medical imaging, and adapting computer technology to assist people with severe physical disabilities.

Two separate curricula are available. Curriculum A is the basic degree program. Curriculum B is a premedical program that prepares students to apply to medical school. Students who transfer between curricula must complete the final curriculum in total.

The Undergraduate Honors Thesis track provides talented, highly motivated students the opportunity to develop their interests and professional skills by pursuing carefully structured programs of independent study, which culminates in completion of the Undergraduate Honors Thesis. Graduates may also be qualified to pursue graduate studies in engineering or the life sciences.

Degree Requirements—Biomedical Engineering

Bachelor of Science in Biomedical Engineering Degree

General Education Requirements 68

Required substitutions:
MTH 229, 230
PHY 240/200, 242/202, 244/204

Engineering Requirements 97

BME 199 2
BME 419, 420, 422, 428, 439, 440 20
Human Factors Engineering

The Human Factors Engineering program emphasizes the evaluation, design, and improvement of complex systems. These systems can range from using a calculator to flying the space shuttle. The program recognizes the central role of the people in such systems, as both operators and beneficiaries, and provides the breadth of knowledge necessary to design systems from a user-centered perspective. Students take a variety of courses across traditional engineering disciplines and in other areas. These include probability and statistics, optimization, production, engineering economics, computing, operations management, and psychology. The curriculum provides a broad basis, which includes core industrial engineering courses while focusing on the human aspects of systems design.

Human Factors Engineering Program Objectives

- To provide graduates with the tools, knowledge, and problem-solving skills to design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and energy.
- To provide graduates with a foundation in mathematics, science, and engineering principles that underpins their profession.
- To provide graduates with an understanding of the user-centered design process.
- To prepare graduates who can work in a team environment and who can communicate effectively both written and orally.
- To provide graduates an understanding of their role as engineers in the context of a global society.
- To prepare graduates for professional practice and for admission to graduate programs.

Two separate tracks are available. Curriculum A, the traditional Human Factors Engineering degree program, provides students with a significant depth of knowledge in human factors principles as applied to system design. Curriculum B is the Industrial and Systems Engineering Track. This track emphasizes a broad background in user-centered design within an industrial and systems engineering framework. Elective/concentration requirements are provided in order that students may develop a focus area of application. Currently defined focus areas in Curriculum B include: Human Factors Engineering, Information and Computer Systems, Operations Management, and Manufacturing Systems/Materials Science. Students who successfully complete the defined concentration area courses and meet departmental requirements in Information and Computer Systems, Operations Management, or Manufacturing Systems/Materials Science will receive a minor in Computer Science for Engineers and Scientists, Operations Management, or Materials Science and Engineering, respectively.

The Undergraduate Honors Thesis track provides talented, highly motivated students the opportunity to develop their interests and professional skills by pursuing carefully structured programs of independent study, which culminates in completion of the Undergraduate Honors Thesis.

Graduates of the program pursue careers in a wide range of settings including manufacturing, health care delivery, information systems, aerospace, consulting, and telecommunications. In addition, students may choose to continue their education in graduate school.

Degree Requirements—Human Factors Engineering

Bachelor of Science in Human Factors Engineering Degree (Curriculum A)

General Education Requirements 68

Required Substitutions:
MTH 229, 230
PHY 240/200, 242/202, 244/204

Engineering Requirements 98

BME 419, 428, 440 10
EGR 335 3
EE 301, 302, 321, 401/402 14
EE 413/414 4
Computer Engineering

Professors  Berra, Brandeberry, Garcia (chair), Rattan, Sudkamp
Associate Professors  Awwal, Chung, P. Chen, Dong, Goshtasby, Jean, Mateti, Rizki, Thirunarayan
Assistant Professors  Cox, Doorn, Gutierrez-Osuna, Tomko
Lecturers  Finkelstein, Meyer, Spiegel
Instructors  Carl, Rea, Taylor
Research Assistant Professor  J. S. Chen
Adjunct Research Associate Professor  Tamburino

The Bachelor of Science degree program in computer engineering is accredited by the Accreditation Board for Engineering and Technology (ABET). The curriculum is carefully designed to provide a modern program, balancing the study of hardware, software, theory, and practice. The program prepares students to be skillful practitioners by combining these studies with a thorough foundation in science, mathematics, and electrical and computer engineering. In addition to offering well-equipped educational laboratories, excellent faculty, and flexible programs for working professionals, the program also affords students with unique opportunities for research in the local area.

Laboratory experience in design, experimentation, observation, implementation, and discovery complement the theoretical portion of the program.

Computer Engineering Program Objectives

- To produce graduates recognized by industrial, government, and academic entities as having a sound, current, and comprehensive education by providing a balanced and integrated hardware and software educational experience that is rich in modern laboratory, project, and design experiences, and which emphasizes team participation, problem solving, and communication skills.

- To prepare and retain students who, upon graduation, will be motivated to pursue lifelong learning, continuing education, and graduate studies, as required by their personal development goals, through a stimulating, broad, and modern educational experience that is well grounded in the mathematical, scientific, and engineering principles, as well as in the fundamental concepts and theory of computing.
• To instill in Computer Science and Engineering students a sense of social responsibility, a code of conduct, and ethical values appropriate to the discipline, so that our graduates are valuable contributors in their societal and professional environments.

• To encourage broad participation in our programs by nontraditional students (such as part-time, working, returning, and students with disabilities), and by women and minorities, through accessible facilities and through our scheduling and conduct of late afternoon and evening classes.

• To recognize and encourage excellence in faculty teaching, research, and service.

Graduates of this computer engineering program are prepared to supervise, design, and implement systems employing computer hardware, software, and firmware.

## Degree Requirements—Computer Engineering

### Bachelor of Science in Computer Engineering Degree

- **General Education Requirements**
  
  General Education Requirements 68

- **Required substitutions:**
  
  MTH 229, 230
  PHY 240/200, 242/202, 244/204

- **Departmental Requirements**
  
  Departmental Requirements 51
  
  CS 240, 241, 242, 400, 415 19
  CEG 260, 320, 360, 433, 434, 460 24
  CEG 402, 453 8

- **Engineering Requirements**
  
  Engineering Requirements 29
  
  ME 212, 213 8
  EE 301/502, 303/504, 321, 322, 331, 332 20

- **Computer Science/Engineering Electives**
  
  Computer Science/Engineering Electives 16

  Electives must be chosen with the consent of an advisor to provide coherent major concentration and design experience. At least four credit hours of CEG 498, Design Experience, must be selected.

- **Mathematics/Statistics/Science Requirements**
  
  Mathematics/Statistics/Science Requirements 29
  
  CHM 121 5
  MTH 231, 232, 233, 253, 257 21
  STT 363 3

- **Technical Communications Requirements**
  
  Technical Communications Requirements 3
  
  EGR 335 3

- **Total**
  
  Total 196

Curriculum design changes from time to time to meet educational and accreditation needs. The curriculum outlined is typical, however, students should check with the department for the current curriculum guide. All programs should be planned in consultation with an advisor.

## Computer Science

**Professors** Berra, Garcia (chair), McKee, Sudkamp.

**Associate Professors** Aswad, Chung, P. Chen, Dong, Goshtasby, Jean, Mateti, Rizki, Thirunarayan

**Assistant Professors** Cox, Doom, Gutierrez-Osuna, Hawley (WSU Lake Campus), Tomko

**Lecturers** Finkelstein, Meyer, Spiegel

**Instructors** Carl, Ren, Taylor

**Research Assistant Professor** J. S. Chen

**Adjunct Research Associate Professor** Tamburino

### Computer Science Program Objectives

The Bachelor of Science degree program in computer science is accredited by the Computing Sciences Accreditation Board (CSAB). The curriculum is carefully designed to provide a modern program, balancing the study of hardware, software, theory, and practice. The program prepares students to be skillful practitioners by combining these studies with a thorough foundation in science, mathematics, and computer science. In addition to offering well-equipped educational laboratories, excellent faculty, and flexible programs for working professionals, the program affords students with unique opportunities for research in the local area. The degree program allows for a second concentration in an area of mathematics, science, business, or the arts.

- To produce graduates recognized by industrial, government, and academic entities as having a sound, current, and comprehensive education by providing a balanced and integrated hardware and software educational experience that is rich in modern laboratory, project, and design experiences, and which emphasizes team participation, problem solving, and communication skills.

- To prepare and retain students who, upon graduation, will be motivated to pursue lifelong learning, continuing education, and graduate studies, as required by their personal development goals, through a stimulating, broad, and modern educational experience that is well grounded in the mathematical, scientific, and engineering principles, as well as in the fundamental concepts and theory of computing.
Engineering and Computer Science

- To instill in Computer Science and Engineering students a sense of social responsibility, a code of conduct, and ethical values appropriate to the discipline, so that our graduates are valuable contributors in their societal and professional environments.
- To encourage broad participation in our programs by nontraditional students (such as part-time, working, returning, and students with disabilities), and by women and minorities, through accessible facilities and through our scheduling and conduct of late afternoon and evening classes.
- To recognize and encourage excellence in faculty teaching, research, and service.

Degree Requirements—Computer Science

Bachelor of Science in Computer Science Degree

General Education Requirements 68

Required substitutions:
MTH 229, 230
PHY 240/200, 242/202, 244/204 (students pursuing the Business Program Option should substitute EC 201 for EC 200)

Departmental Requirements 59

CS 240, 241, 242, 400, 415 19
CS 405, 466, 480 12
CEG 255 4
CEG 260, 320, 360, 433, 434, 460 24

Computer Science/Engineering Electives 16

Electives must be chosen with the consent of an advisor to provide a coherent major concentration.

Mathematics/Statistics/Science Requirements 22

MTH 231, 253, 257 11
STT 360, 361 8
CHM 121, or BIO 112, or physics course with PHY 242 or PHY 244 as a prerequisite 3
Technical Communications Requirements 3
EGR 335 3

Elective/Concentration Requirements 24

Choose from one of the computer science program options listed below.

Total 192

Computer Science Program Options

General

Elective/Concentration Requirements 24

Language Requirement 8

English (200 level or above, not including ENG 347 and 405) or foreign language*

Additional Electives 16

Sixteen hours from one Liberal Arts, Science, Mathematics, or Engineering department

*Includes comparative literature, linguistics, modern language humanities, and classics (CHI, CLP, CPL, DN, FR, GER, GR, ITA, JPN, LAT, LL, ML, POR, RUS, SPN).

Business

Elective/Concentration Requirements 24

EC 202, 203 6
ACC 201, 202, 203 9
MGT 302 3
MKT 301 3

Science

Elective/Concentration Requirements 24

MTH, EE** 8-12

Courses from one mathematics, science, or engineering department 12-16


Curriculum design changes occasionally to meet educational and accreditation needs. The curriculum outlined is typical; however, students should check with the department for the current curriculum guide. All programs should be planned in consultation with an advisor.

Minor in Computer Science for Engineers and Scientists

The objective of this minor is to provide students who have a background in engineering or science with a structured and coherent concentration of study in computer science that can be noted on the student's transcript. The program consists of 23 quarter hours covering a basic introduction to computer science, computer mathematics, data structures; and an application area chosen from operating systems, software engineering, or database management systems.
Minor Requirements 23

Required Courses
- CS 240 or CEG 220 19
- CS 241, 242, 400

Elective Courses
- CS 405 or CEG 433 or CEG 460 4

Minor in Computing and Information Technology (CIT)

The objective of the CIT minor is to satisfy the needs of the intelligent and responsible application of computing and information technologies to majors in fields that would not have computer science or computer engineering as their fundamental and exclusive basic orientation, but would want to benefit from the products of applications of the latter two disciplines and their proper use. The minor provides a conceptual foundation as well as a practical application of various computing and information technology skills. At present, this minor is intended to serve the Department of Accountancy.

Minor Requirements 27

Computer Literacy
- CS 205 or CS 206 4

Computer Programming
- CS 141, 142; or CS 208, 209; or CS 240, 241 8

Object-Oriented Programming
- CS 214 or CS 242 4

PC Networking
- CEG 210 4

Client-Server Databases
- CS 302 4

Application Area
- Major Specific (ACC 412 for Accountancy Majors) 3

Certificate in Object-Oriented Programming

The objective of this certificate is to provide an undergraduate experience in object-oriented programming fundamentals for practitioners of programming in other more classical methodologies and practices. It is assumed that students pursuing this certificate will have at least three years of industrial experience in the programming field, and a baccalaureate degree.

Certificate Requirements 21

- CS 241 or CEG 330 4
- CEG 255 4
- CS 214, 242, 340, 400 13

Electrical Engineering

Professors Brandeberry, Hong, Kazimierczuk, McCormick, Pujara, Rattan, Shenoi, Siferd (chair)

Associate Professors Bethke, Chen, Garber, Hannen (Emeritus), Misra, Naishadham, Shaw, Spalding, Xue

Lecturer Smith (assistant to the chair)

The Department of Electrical Engineering offers programs leading to the Bachelor of Science in Electrical Engineering degree (B.S.E.E.) and the Bachelor of Science in Engineering Physics degree (B.S.E.P.). These two engineering programs are accredited by the Accreditation Board for Engineering and Technology (ABET).

Electrical Engineering

Electrical engineers find challenging employment opportunities in industry and the service sectors of the economy, as well as in local, regional, and national governments. Career areas include research, design, teaching, management, manufacturing, and marketing.

The electrical engineering degree program is crafted to provide a balanced and modern curriculum. The program emphasizes engineering design with extensive laboratory experience. Courses in computer language and applications, mathematics, chemistry, physics, engineering mechanics, and electric circuits are balanced with English, social science, and the humanities to provide a well-rounded foundation for the student.

Electrical Engineering Program Objectives

- To prepare students for employment as electrical engineers.
- To prepare students for success in graduate studies.
- To prepare students to solve real world engineering problems using modern electrical engineering analysis and design techniques.
- To offer a curriculum and schedule of classes so that both traditional and part-time working students can complete degree requirements.
- To offer a program that is recognized for the quality and strength of the laboratory component.

Required courses in electronic circuits, control theory, communication theory, and electromagnetic theory give the student an overview of the electrical engineering discipline. At least one elective design sequence in either control systems, electronic
systems, communication systems, electromagnetic systems, or design projects with industry is required to provide strength and depth for each graduate. For example, two required courses in electronic circuits lead to a four-course elective sequence culminating in a very large scale integrated (VLSI) circuit design project. Similarly, the required course in control theory leads to analog and digital controller design courses. In the capstone course, students design and test control circuits.

Degree Requirements—

Electrical Engineering

Bachelor of Science in Electrical Engineering Degree

General Education Requirements 68

ENG 101, 102 8
Social Science and Humanities 34
Required substitutions:
MTH 229, 230 10
PHY 240/200, 242/202, 244/204 16

Engineering Requirements 65

ME 212, 213, 315, CEG 411 16
EE 140, 260, 301/2, 303, 321, 322 25
EE 331/2, 413/4, 421, 425, 431/2 24

Related Course Requirements 33

CEG 220 or CS 240 4
MTH 231, 232, 233, 253 18
STT 363, CHM 121, STT 363, EGR 335 11

Technical Electives* 8

Engineering Electives 24

Design Sequence I—Electronic Systems
EE 444 or 449, 451, 454, 455 16

Design Sequence II—Control Systems
EE 415/416, 417/420, 418 12

Design Sequence III—Communication/Signal Processing
EE 435 or 473, 436, 476 12

Design Sequence IV—Electromagnetics
EE 346, 446, 448 12

Design Sequence V—Design Projects with Industry
EE 499 (3 quarters) 12

Total 198

*Technical elective courses are to be selected from those numbered 200 and above in either the Colleges of Engineering and Computer Science, Science and Mathematics, or the Business and Administration, and approved by the advisor. Redundant courses such as MTH 228 and co-listed courses may not be used as technical elective courses. Students wishing to develop skill in programming as well as C and C++ languages may choose CS 240 in place of CEG 220 and use CS 241 and CS 242 as their technical electives.

Engineering elective courses (24 credit hours required) are to be selected from those numbered 300 or above in the College of Engineering and Computer Science and approved by the advisor. At least 20 of the 24 credit hours must be from electrical engineering courses. Extra engineering elective credits may be used to satisfy technical elective requirements. Students desiring to complement electrical engineering skills with an increased emphasis on computer science may choose a minor in computer science for engineers and scientists. This minor is focused on programming theory, C and C++ languages, data structures and an application area chosen from operating systems, software engineering, or database management systems.

Engineering Physics

Engineering physics is an interdisciplinary program offered jointly by the Department of Electrical Engineering and the Department of Physics. As the name suggests, this program merges a strong knowledge of the basic science of physics with the knowledge of designing unique engineering systems, processes, and devices. An engineering physicist completes the link between the scientist and the engineer by applying theoretical approaches to solving practical problems.

Engineering Physics Program Objectives

• To prepare students for employment in the engineering profession with emphasis on research and development.
• To prepare students for success in graduate studies.
• To prepare students to solve real world engineering problems using modern engineering analysis and design techniques.
• To offer a curriculum emphasizing physical science to produce engineering physicists capable of combining theory with analysis and design to solve practical engineering problems.

This curriculum contains a core of engineering science, mathematics, and physics, which prepares students for research and development work in industry. Study in this field also provides a sound foundation for graduate study in physics, applied physics, nuclear science and engineering, aerospace engineering, and other areas of engineering research based on physics and applied mathematics. It opens the way to several modern technological areas such as recent advances in semiconductors, lasers, aerodynamics, plasmas, radio astronomy, electro-optics, superconductivity, space science, and transducer instrumentation. The engineering physicist, for example, is ideally prepared to work on such
problems as nonpolluting energy sources or to develop new technologies that use natural resources more efficiently.

The favorable faculty/student ratio in this program allows for independent research or design projects under faculty supervision in laboratories or, in some cases, with external government and industry laboratories. These hands-on senior projects give students valuable experience that better equips them to find employment in industry as well as in government laboratories.

Degree Requirements—Engineering Physics

Bachelor of Science in Engineering Physics Degree

| General Education Requirements | 68 |
|ENG 101, 102 | 8 |
|Social Science and Humanities | 34 |
|Required substitutions: | |
|MTH 229, 230 | 10 |
|PHY 240/200, 242/202, 244/204 | 16 |
|Engineering Requirements | 53-55 |
|ME 202, 212, 315 | 11-12 |
|(PHY 420 may be substituted for ME 315) |
|EE 301/302, 303/304, 321, 322, 331/2 | 21 |
|EE 413/414, 415/416, 421 | 12 |
|EP 231, 494 | 9-10 |
|(Other sets of design sequences may be substituted for 9 credit hours of EP 494) |
|Physics Requirements | 29-31 |
|PHY 260, 316, 371, 372, 450, 451, 452 | 23 |
|EP 400, 401, or PHY 460, 461 | 6-8 |
|Related Course Requirements | 35-39 |
|CHM 121, 122 | 10 |
|CEG 220 or EGR 153 | 4 |
|MTH 231, 232, 233, 253, 333 | 21 |
|Technical Electives* | 19 |
|*At least three courses are to be chosen from: |
|CEG 411; EE 431/432; EGR 482; ME 317, 318; |
|PHY 322, 432, EP 402. |
|Total (minimum hours required) | 204 |

Mechanical and Materials Engineering

Professors: Dadras, Grandhi, Hankey (Emeritus), J. Thomas, Weiss
Associate Professors: Bethke (chair), Cornelius, Lieb, Slater, Srinivasan, S. Thomas
Assistant Professors: Amer, Friar (Emeritus) Menard, Mukhopadhyay, Wolff

The Department of Mechanical and Materials Engineering offers undergraduate programs in mechanical engineering and materials science and engineering. Both programs are accredited by the Accreditation Board for Engineering and Technology (ABET). These programs cover traditional engineering fundamentals and develop the skills for modern engineering analysis and design. Laboratory and computer experience are integrated throughout the curriculum. Most required courses are offered in both day and evening sections at least once a year.

Mechanical Engineering

Mechanical engineering is a modern, creative discipline encompassing a wide variety of technical activities. The field is changing rapidly with the progress of the computer era, but the key element that links all of the activities within mechanical engineering is design. The design function is now largely computer based and involves modeling, simulation, analysis, and synthesis.

Historically, mechanical engineering includes two principle stems. One stem concerns heat, fluids, and energy. Engineers who study combustion in a turbine engine or aircraft lift and drag are practicing in this area. The other stem concerns force and motion in mechanical systems. Problems here include determining robot trajectories, analyzing vibrations to minimize noise, or predicting the stresses in a rotating disc.

The curriculum includes advanced course work in mechanics, thermal sciences, fluids, materials, electronics, mechanical systems, and design.
Mechanical Engineering Program Objectives

- To provide a quality educational experience that prepares our mechanical engineering students for successful entry into the engineering profession, to pursue graduate study, and to stimulate lifelong learning.
- To provide a solid foundation in mathematics, basic and engineering sciences, computer application, laboratory techniques, and their use in solving mechanical engineering problems.
- To provide broad and significant experience in engineering design, enhance communication skills, and provide the opportunity to work in collaborative groups.
- To provide these educational opportunities in modern facilities at competitive cost to a variety of qualified individuals, including part-time and evening students.

Degree Requirements—
Mechanical Engineering

Bachelor of Science in Mechanical Engineering Degree

General Education Requirements 68

Required substitutions:
- MTH 229, 230
- PHY 240/200, 242/202, 244/204

Engineering Requirements 91

- EGR 153; ME 199: 7
- ME 202, 212, 213, 220: 15
- ME 313, 315, 316, 317, 318, 370, 371: 28
- ME 408, 414, 415, 460, 490, 491: 23
- EE 301/302, 321, 401/402, 413/414: 18

Related Course Requirements 35

- CHM 121, 122: 10
- MTH 231, 232, 233, 253: 18
- STT 363: 3
- CS 316: 4

Technical Electives*: 11

These courses to be selected from an approved list.

Total 205

* Technical electives are listed on the Mechanical Engineering program guide available in the department office.

Materials Science and Engineering Program Objectives

- To prepare our students to successfully enter the engineering profession, to pursue graduate study, and to appreciate the benefits of lifelong learning.
- To provide opportunities to learn basic science and engineering concepts and be able to apply them to the field of materials.
- To provide the opportunities to understand the relationship between processing, microstructure, properties, and performance of different material systems.
- To provide the opportunity to develop analytical, experimental, and computational skills.
- To provide these educational opportunities, in both day and evening classes, at a competitive cost to qualified full-time and part-time students.

Degree Requirements—
Materials Science and Engineering

Bachelor of Science in Materials Science and Engineering Degree

General Education 68

Required substitutions:
- MTH 229, 230
- PHY 240/200, 242/202, 244/204

Engineering Requirements 92

- EGR 153, ME 199: 7
- ME 202, 212, 213, 220: 15
- ME 313, 315, 370, 371, 375, 376, 385, 386: 27
- ME 470, 472, 477, 479, 482, 483, 492, 493: 30
- ME 485, 486, 487, 488, 489 (select any two): 8
- EE 301, 302: 5

Materials Science and Engineering

Materials science and engineering has evolved over the last 25 years from metallurgical engineering, polymer chemistry, and ceramic science. It is increasingly recognized as a key engineering field that opens the door for new developments in other advanced technologies. Over the past several decades, scientists and engineers have successfully developed radically new materials. Examples include lightweight alloys for structural use, composites of high-strength fibers in ductile matrices, semiconductors for electronic devices, and more recently, high-temperature semiconductors. These advances typify the challenge faced by materials engineers—to select, modify, or develop the right materials for new applications and technologies.

The curriculum includes advanced course work in engineering mechanics, materials science, ceramics, metallurgy, polymer science, electric circuits, materials testing, processing, and design.
Related Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>CHM 121, 122</td>
<td>10</td>
</tr>
<tr>
<td>MTH 231, 232, 233, 253</td>
<td>18</td>
</tr>
</tbody>
</table>

Technical Electives*

These courses to be selected from an approved list.

Total 203

*Technical electives are listed on the Materials Science and Engineering program guide available in the department office.

Minor in Materials Science and Engineering

Engineering and nonengineering students may earn a minor in materials science and engineering (MSE), in addition to their major, by completing 45 credits with an average grade "C" or higher. Those students who complete the 45 credits from an approved list of approved courses. The elective courses permit a student to tailor his or her particular minor program by choosing courses that concentrate on a specific aspect of materials science and engineering, or selecting courses that complement the student's major. Those students who complete the 45 credits with an average grade "C" or higher will receive the designation of "Minor in Materials Science and Engineering" on their transcript when they graduate. Minor course credits may also be used to satisfy the requirements of the major field, if allowed.

Minor Requirements 45

Required Courses 34

ME 212, 213, 313, 315
ME 370, 371, 375, 376, 477

Elective Courses 11

To be selected from an approved list available in the department office, 209 Russ Center.
LIBERAL ARTS
Admissions and Advising

B.A. and B.S. Programs

To enter a B.A. or B.S. program in the College of Liberal Arts students must have a minimum cumulative GPA of at least 2.0, and a minimum of 24 credit hours completed including ENG 101 and 102 (with a grade of C or better in both), HST 101, and two other General Education courses.

In addition, students must be accepted into a major program. Some programs have additional, more stringent admission requirements.

B.F.A. Programs

Students may enter the college’s B.F.A. programs with a minimum of 24 credit hours. In addition to general university requirements, many of these programs also require auditions, interviews, or portfolio reviews.

B.Mus. Programs

Students enter the college’s B.Mus. program as freshmen and must successfully complete an audition in a major performance area.

Returning Students

Students who return to Wright State after an absence of four or more quarters must reapply for admission and satisfy the admission requirements listed above. Students who return after eight or more quarters’ absence will have to complete the program requirements that are in effect when they are readmitted to the college.

Advising

Students majoring in liberal arts degree programs receive advising from the Liberal Arts Advising Office and from a major advisor. The Liberal Arts Advising Office is responsible for university and college requirements; the major advisor is responsible for program requirements. The Liberal Arts Advising Office sends out a checkpoint, which charts a student’s progress toward the bachelor’s degree at two points in the student’s career: when the student enters the college and when the student achieves senior standing. Students should consult their major advisor frequently, but especially when they enter a program and when they receive their senior check sheet.
Degrees and Areas of Study

The Bachelor of Arts

The Bachelor of Arts degree provides the broadest educational program. Building on the General Education Program, it requires study of a foreign language and research methods combined with concentrated study in a single major area. Elective courses give students a chance to explore subjects of personal interest or to take courses that improve their employment prospects. These majors prepare students for careers in fields such as communication, foreign service, government, journalism, teaching, writing and editing, and social work. Liberal Arts programs are also excellent preprofessional training for law, medicine, and business, and all of them provide preparation for students interested in pursuing graduate study.

Programs leading to the B.A. degree are offered in anthropology, art, art history, classical humanities, communication studies, economics, English, French, geography, German, Greek, history, international studies, Latin, mass communication, modern languages, motion picture studies, music, organizational communication, philosophy, political science, religion, selected studies, social and industrial communication, social science education, social work, sociology, Spanish, theatre studies, and urban affairs.

The Bachelor of Science

As an option to the B.A., the Bachelor of Science degree stresses training in mathematics, statistics, and computer skills. There is no foreign language requirement. The College of Liberal Arts offers the B.S. degree only in geography and urban affairs.

The Bachelor of Fine Arts

The Bachelor of Fine Arts degree offers intensive, specialized training designed to prepare students for a professional career in the fine and performing arts with a special emphasis on performance and studio work. The B.F.A. is offered by the Department of Art and Art History, as well as by the Department of Theatre Arts, which offers programs in dance, motion picture production, acting, acting—musical theatre, and design/technology/stage management. The B.F.A. degree is also available through the Selected Studies Program.

The Bachelor of Music

The Bachelor of Music degree is designed to provide professional training in music. It is a concentrated, narrowly focused program offering specializations in performance, music education, and music history and literature.

Interdisciplinary Study

The College of Liberal Arts offers interdisciplinary majors in international studies, selected studies including women's studies, urban affairs, and social and industrial communication. Interdisciplinary courses are offered by various departments.

Degree Requirements

All students must complete the program requirements of the major to which they have been admitted. In addition, to be eligible for a bachelor's degree from the College of Liberal Arts, students must:

1. fulfill the university General Education requirements.
2. complete the residency requirement of 45 credit hours at Wright State. At least 15 of the last 45 hours for the degree must be taken in residence.
3. complete at least 192 credit hours with at least a 2.0 cumulative average. No more than 8 hours of physical education courses apply toward a degree.
4. complete at least 100 credit hours of work within the college.
5. complete at least 60 credit hours in upper division courses (those numbered 300 and above). At least 30 of these must be taken at Wright State.

Additional Requirements for the B.A. Degree

Foreign Language and Research Methods

Students working toward the B.A. degree must complete a block of courses in foreign language and research methods.

Foreign Language. Students must demonstrate proficiency in a foreign language at the 202 level, either by satisfactorily completing course work or by taking an examination. For proficiency exams in French, German, and Spanish, consult the Department of Modern Languages. For proficiency exams in Greek or Latin, consult the Department of Classics. Other languages are acceptable, subject to approval by the Liberal Arts Advising Office.
Students who are continuing a language that they began studying elsewhere need to be placed at the appropriate level. For placement in French, German, and Spanish, contact the Department of Modern Languages. For placement in Greek and Latin, contact the Department of Classics.

**Research Methods.** Students must complete a block of three courses in research methods, one each in computers, logic, and statistics and methodology. For details, consult the Liberal Arts Advising Office or a major advisor.

### Maximum Credit Hours in Major

Except in unusual circumstances, students may count no more than 68 hours of courses in their major department toward the 192 hours required for graduation. Exceptions must have the prior approval of the dean of the college or of the college petitions committee.

### Minors

A minor program provides students with a structured concentration of study in a second area of specialization; the minor work is noted on students' permanent university records. A minor typically requires about half the hours required in a major program. Minors are available in African and African American studies, anthropology, classical humanities, communication, economics, English, French, geography, German, history, music, political science, religion, sociology, women's studies, Spanish, and Urban Affairs. Minors are described in the department program sections of this catalog. For more information contact the appropriate department office.

Students who wish to combine the breadth of a major in the College of Liberal Arts with a general foundation of business courses may use their elective hours to earn a business minor. This program consists of a core of courses that satisfy most of the course prerequisites for the Master of Business Administration program at Wright State. (See page 65 for further details.)

### Honors Program

Seniors can earn honors at graduation by participating in a departmental honors program. Designed for students capable of superior work, honors programs are available in anthropology, art history, classics, communication, English, geography, history, modern languages, motion pictures, music, philosophy, political science, religion, social work, sociology, and women's studies. Honors programs usually involve intensive independent study under the direction of a faculty mentor over a period of two or three quarters. For more details, contact the appropriate department office.

### Cooperative Education Program

A number of departments in the College of Liberal Arts offer students an opportunity to earn academic credit for relevant work experience through the cooperative education program. Co-op students can apply classroom learning in work settings, explore potential career fields, and gain practical experience that improves employment prospects after graduation.

A maximum of 16 hours of cooperative education credit can be counted toward a bachelor's degree. For more information, contact the departments of art, communication, economics, English, geography, history, political science, social work, sociology/anthropology, and theatre or the Women's Studies Program. A cooperative education advisor in the Career Services office can provide more details.

### Teacher Licensure

The College of Liberal Arts offers several degrees that prepare students interested in achieving an Ohio teaching license. Bachelor of Arts degrees that prepare students for a graduate licensure program are available in English-Language Arts Education, Social Science Education, French, and Spanish. The Bachelor of Fine Arts degree is available for students seeking graduate licensure in Art Education. In addition, completion of the requirements for the Bachelor of Music degree in Music Education will lead towards a teaching license, for which a graduate degree is not required.

Students interested in licensure programs must be advised by a major advisor in the College of Liberal Arts. Before applying to a graduate licensure program, students should schedule a conference with an education advisor to review program admission and degree requirements.

### Student Organizations

Within the college, departments sponsor a wide variety of student clubs and honor societies. Involvement in these organizations allows students to develop closer ties with the faculty and other students in the same major. In addition, it gives students the opportunity to join professional organizations, gain career information, and participate in professional and social activities. Interested students should contact departmental faculty for details.
African and African American Studies

Program Director Paul R. Griffin

The African and African American Studies minor offers students an opportunity to bring a scholar's mind to the study of Africa and the African Diaspora (the spread of people of African descent throughout the world). An interdisciplinary curriculum enables students to gain a diverse perspective about African and African American cultures.

The minor complements all of Wright State's undergraduate majors. It also facilitates the development of a global view that is essential for living in an increasingly multicultural society. The minor particularly promotes an understanding of African and African American humanity, heritage, and contributions to world civilization.

Requirements for the minor can be fulfilled by selecting from course offerings in anthropology, art, economics, history, literature, music, political science, religion, social work, sociology, and theatre. A minimum of 20 hours is required, generally consisting of six courses from three areas: humanities (two–three courses), social sciences (two–three courses), and fine arts (one–three courses). Students must have a 2.0 GPA to enter the program and receive a grade of C or above in all course work taken toward the minor.

Anthropology

See Sociology and Anthropology.

Art and Art History

Professors Cantelupe (Emeritus), Geibert, Macaulay
Associate Professors Caron (chair), Fitch, Kiser (Emeritus), Koerlin (Emeritus), Leach, McDowell (Emeritus), Must (Emeritus), Nathanson, Vito
Assistant Professor Cebulash

The Department of Art and Art History offers programs leading to the Bachelor of Arts and the Bachelor of Fine Arts degrees, with courses in art history, drawing, painting, photography, printmaking, and sculpture; a dual B.A. degree combining art history and studio courses is also available. The B.A. degree is designed for 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. Students who wish to teach art in Ohio public schools can pursue the B.F.A. degree in art. Upon completion of this undergraduate degree program in the College of Liberal Arts, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State's College of Education and Human Services. Graduates of the B.F.A. in art and the Professional Educators Program are then eligible to seek licensure from the Ohio Department of Education in Visual Arts Pre-K–12.

Requirements for admission to the PEP program include a minimum GPA, admission testing, and interviews. Throughout their undergraduate work, students should consult regularly with an advisor in the College of Education and Human Services to ensure that they are meeting requirements to the PEP program.

Because self-expression and self-learning are the ultimate goals of the program, students are largely responsible for determining the options that best meet their individual needs and interests. Candidates for a degree in art may prepare for graduate study, careers in teaching, or the professional practice of art.

In the studio area, studies begin with introductory courses in drawing, sculpture, and photography. These courses are designed for the beginning artist and guide the student's development in the visual arts. The program helps students expand and express their knowledge and grow in self-expression by exploring the processes and language that are basic to all visual arts. Rather than follow a system of independent courses in a given medium or discipline, students investigate issues and ideas 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 students have completed between 40 and 60 credit hours in the department. Those who wish to become B.F.A. candidates must petition the faculty at the time of their review. Students who do not meet the basic standards of the department during their first review may petition to have a second review of their work before they complete 84 credits in art. All candidates for the B.F.A. degree must be represented in the senior exhibition.
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.

**Degree Requirements—Art**

**Bachelor of Fine Arts Degree**

**General Education Requirements**

Departmental Requirements* 123

**Departmental Requirements**

ART 211, 212, 213 and three additional art history courses 24

Eight courses, two from each of the following studio areas: painting, printmaking, sculpture, photography 32

Sixteen credits in drawing 16

Five additional courses in area of major concentration 20

Sophomore workshop (ART 200) 1

Senior seminar (ART 400) 2

Departmental studio electives 16

Departmental or related electives 8

ART 209 4

Nondepartmental Electives 12

**Total** 192

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

**B.F.A. Review Minimum Requirements**

ART 211, 212, 213 12

ART 206, 228 8

ART 207, 258 8

ART 208, 378 8

One additional studio course 4

**Total** 40

**Degree Requirements—Art**

**Bachelor of Arts Degree**

**General Education Requirements**

Departmental Requirements 68

**Departmental Requirements**

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 7

Departmental studio electives 12

Sophomore workshop (ART 200) 1

Language and Research Methods Requirement 24–32

Nondepartmental Electives 35–43

**Total** 192

**Degree Requirements—Art History**

After completing seven art history courses and before graduating, art history majors are required to write a senior paper under the supervision of an art history faculty member. The senior paper requires expansion or further investigation of a paper the student submitted for a 400-level course.

**Bachelor of Arts Degree**

**General Education Requirements**

Departmental Requirements 68

ART 211, 212, 213 12

One course each from six of the following art history areas: American, ancient-classical, medieval, museology, Renaissance, Baroque, nineteenth century, twentieth century, non-Western, or art theory and criticism 24

Three courses, one each from three of the following studio areas: drawing, painting, printmaking, sculpture, photography 12

Art history electives 12

Departmental electives 8

Language and Research Methods Requirement 24–32

Nondepartmental Electives 35–43

**Total** 192

**Degree Requirements—Art History/Art Studio**

**Bachelor of Arts Degree**

**General Education Requirements**

Departmental Requirements 88

ART 211, 212, 213 12

One course each from six of the following art history areas: American, ancient-classical, medieval, museology, Renaissance, Baroque, nineteenth century, twentieth century, non-Western, or art theory and criticism 24

One course each from four of the following studio areas: drawing, painting, printmaking, sculpture, photography 32

Departmental electives 7

Departmental studio electives 12

Sophomore workshop (ART 200) 1
Two courses each from four of the following studio areas: drawing, painting, photography, printmaking, or sculpture 32
Art history electives 8
Studio electives 12

Senior Paper
After completing seven art history courses and before graduating, art history majors are required to write a paper under the supervision of an art history faculty member. The senior paper requires expansion or further investigation of a paper the student submitted for a 400-level course.

Language and Research Methods Requirement 24–32
Nondepartmental Electives 35–43
Total 212

Art History Honors Program
The honors program in the Department of Art History is designed to give students with outstanding academic ability and superior accomplishments in art history the opportunity to complete a program that encourages and recognizes their distinguished efforts. These students may earn an honors degree by completing the departmental major requirements, maintaining a high academic record, and successfully completing a senior honors project. Students are usually admitted to the program during the fourth quarter prior to graduation. Interested students can obtain information on the honors program from the Department of Art History office.

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

The Department of Classics offers majors leading to the Bachelor of Arts degree in classical humanities and in the classical languages of Greek and Latin. The study of the classics is concerned with the civilizations of ancient Greece and Rome. It is the oldest area of study, requiring an understanding of the disciplines of language and literature, art, archaeology, and history to fully appreciate 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 with the department to ensure a well-rounded curriculum. An inflexible requirement is the study of Latin or Greek on the college level. The classical humanities student must complete at least 24 hours of language study and become proficient in at least one of the languages beyond the 202 level. A student who has begun language study elsewhere, or who has experienced a lapse of more than one year in the study of the language, will be given a proficiency examination to determine the appropriate placement level. Students may also major in either Greek or Latin; these students will be expected to develop some facility in the nonmajor language.

The major in classical humanities is appropriate for students who have not decided on a specific vocation and who are interested in the humanities. A bachelor’s degree in classical humanities is suitable for students who do not plan to extend their formal education beyond the undergraduate level. The major in one of the 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. Students who major 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 with the College of Education and Human Services for professional certification requirements.

Degree Requirements—Classical Humanities

Bachelor of Arts Degree

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
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<td>General Education Requirements</td>
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<td>College Research Methods Requirement</td>
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<td>Classical Humanities Electives</td>
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<tr>
<td>Electives and Related Courses</td>
<td>66</td>
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<tr>
<td>Total</td>
<td>192</td>
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</table>
Degree Requirements—Greek
Bachelor of Arts Degree

General Education Requirements 57

College Research Methods Requirement 12

Departmental Requirements 57

Greek Language 36
Electives in Classical Humanities and Latin Language 19
CLS 499 2
Electives and Related Courses 66

Total 192

Degree Requirements—Latin
Bachelor of Arts Degree

General Education Requirements 57

College Research Methods Requirement 12

Departmental Requirements 57

Latin Language 36
Electives in Classical Humanities and Greek Language 19
CLS 499 2
Electives and Related Courses 66

Total 192

Classics Honors Program
Superior students may participate in the departmental honors program upon applying to the Department of Classics. They should have a GPA of 3.5 in classics and 3.0 overall, and should have completed a substantial portion (27 to 30 hours) of their major requirements. Interested students should contact the department for further details.

Minor in Classical Humanities
The department also offers a minor in classical humanities. The minor is an appropriate second field for many students. The minor requires a total of 32 hours, with a minimum of 12 hours in the Greek or Latin language, and a minimum of 16 hours in classical humanities courses, eight of which must be at the 300 level or above.

Communication

Professors Pruett, Rickert, Sayer (chair), Shupe (Emeritus)
Associate Professors DeStephen, Eakins-Reed (Emeritus), Fetzer (Emeritus), John, Spicer
Assistant Professors Ruminski, Yi
Lecturer Baxter

The Department of Communication offers programs leading to the Bachelor of Arts degree. Communication students gain an understanding of human communication through the acquisition of skills in speaking, writing, and critical thinking.

The Bachelor of Arts in communication is suitable for students who wish to enter a communication-related career, or for individuals interested in personal development. The department offers majors in mass communication, organizational communication, and communication studies. Study in organizational communication is appropriate for students seeking careers in training and development or other organizational communication specialties. Study in mass communication is appropriate for students interested in journalism, media management and production, and public relations. The communication studies program allows students to select courses from all of the communication majors to meet their 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 that affect organizational productivity.

The communication major can expect to take both theoretical and practical courses, and to study communication from both the traditional point of view and through experience. Because of this, students are advised to take advantage of the communication activities in the department, college, and university. These activities include cable television, WWSU-FM radio station, The Guardian (student newspaper), the Public Relations Club, cooperative education, and involvement in Dayton-area professional organizations.

Degree Requirements—Communication
Bachelor of Arts Degree

The major in communication is for students interested in personal development or a career in education, industry, government, or the media.
Communication majors are expected to achieve basic proficiency in communication skills and to master the essentials of communication theory. All communication majors must take 11 hours of required courses, as well as a minimum of 44 additional hours in communication. All communication majors are encouraged to participate in communication activities outside the university.

To be admitted as majors, students must have at least a 2.5 GPA.

General Education Requirements 57

Departmental Requirements 55

Required courses:
COM 101, 102, 200, 400 12
Additional electives in major 43
Foreign Language and Research Methods Requirement 24–32
Electives 41–48

Total 192

Communication Major Curricula

Communication Studies

The communication studies major is designed to develop broadly trained students in the liberal arts. Students are encouraged to develop their abilities as effective communicators and as informed critical receivers. The communication studies major affords students maximum freedom of choice in designing their programs of study and areas of specialization.

Communication Studies Major Requirements 44

Major Core Requirements:
COM 141, 152, 333, 335, 401, 449 22
Electives selected from other courses in the department 22

Mass Communication

The mass communication major is intended to provide students with an understanding of the workings of the mass media and the impact of mass communication on today's world.

Mass Communication Major Requirements 44

Major Core Requirements:
2 hours of COM 130 or 330 (or LA 203/205/303/305/403/405), 152, 256, 358, 411, 462 21
Major Core Requirements in Specialization Area
Broadcasting COM 253, 360, 460, 464 15
Print Journalism

Communication Honors Program

The communication honors program provides outstanding students with opportunities to pursue advanced study. To enter the program, students must complete 40 credit hours in communication and have a GPA of 3.5 in the major and 3.0 overall. Departmental honors will be awarded when the student completes the required number of hours for a major in communication, including at least 12 credit hours in approved communication honors courses. Students must complete a departmental honors project and maintain a 3.0 cumulative GPA, and a 3.5 GPA in communication courses, while they are in the honors program.

Minor in Communication

The communication minor is appropriate for students who want to develop additional skill in communication or who feel that an understanding of communication processes will supplement their major. The minor may be especially useful for students in business, computer science, education, and nursing, and students majoring in other areas of the liberal arts.

Minor in Communication Requirements 36

Required Courses
COM 101, 102, 200, 400 12
Additional Courses in Communication
At least 16 hours must be at the 300 level or above 24
Dance
See Theatre Arts.

Economics

Professors Blair, Fichtenbaum, Kumar, Premus, Renas, Sav, Swaney, Treacy (Emeritus)
Associate Professors Dung, Olson, Traynor (chair)
Assistant Professors Hopkins, Osborne
Instructor Sylvester (director, M.S. program)
Lecturer Endres

The field of economics covers a broad range of concerns, from practical questions about how a business can improve efficiency, to the more abstract, study of the limits that nature imposes on human populations and natural resources. Economics aims at improving our welfare by understanding how people make decisions when faced with relative scarcity, and by studying the complex relationships among the production, consumption, and distribution of material goods.

The economics program equips students to pursue careers in business and government, or prepares them for graduate study in economics, business, or law. Graduates of the program have achieved success as executives in a wide variety of industries and are employed as professional economists in such areas as urban economics, workforce and training analysis, business forecasting, school finance consulting, evaluating health and delivery systems, budget analysis, market consulting, government planning, banking, and statistical analysis. Some graduates continue their education in the department’s master’s program in social and applied economics.

The program outlined here is designed to give students both the background that will broaden their future options and the specific skills necessary to apply economic ideas. This includes the ability to express economic ideas clearly and concisely. To enhance writing skills, students are required to complete 12 hours of writing-intensive courses.

Departmental undergraduate advisors are available to all students who need advice about career goals, as well as about elective courses.

Candidates for a Bachelor of Arts degree with a major in economics are required to take a minimum of 51 credit hours in the Department of Economics. Basic courses are supplemented by economics electives.

Degree Requirements — Economics

Bachelor of Arts Degree

General Education Requirements 63

Required substitutions:
EC 201, 202, 203

Departmental Requirements 42
EC 201, 202, 203 (counted above) 15
EC 301, 315, 317, 319 27
Economics Electives 28-29

Related Requirements 16-24
CS 205 4
MTH 129, 228 8
MS 201, 202, 203 (or STT 264, 265) 8-9
Two upper-division courses in one of the following areas: anthropology, geography, history, philosophy, political science, psychology, sociology, or urban affairs 8

Foreign Language and Research Methods Requirement 16-24

Electives 34-43

Total (minimum requirement) 192

Minor in Economics

Any student in the university may earn a minor in economics. The economics minor consists of a core of three courses in principles of economic theory, which serves as a prerequisite for the 15 hours of elective courses. A grade of C or better must be obtained in the EC 201, 202, 203 series. The economics electives will count as business electives for the Bachelor of Science in Business students. Students will be admitted to the economics minor after they have been admitted to their major program. Suggested course concentrations:

English Language and Literatures

Professors: Baker (Emeritus), Bracher (Emeritus), Bullock, Cantelupe (Emeritus), N. Cary (Emeritus), Coreale, Fleischauer (Emeritus), Harden (Emeritus), Howard, Hughes (Emeritus), Hussman (Emeritus), Maner, Packer, Pringle, Sammons, Swanson (Emeritus), Whissen (Emeritus)

Associate Professors: C. Cary (Emerita), Dobson, Gleason (Emeritus), Guthrie, Hall, Kich (WSU-Lake Campus), Law, Limouze (chair), MacDonald, Mack, Milligan, Moliterro (WSU-Lake Campus), Oxindine, Schwartz (WSU-Lake Campus), Thomas

Assistant Professors: Crusan, Hagen (Emerita, WSU-Lake Campus), Loranger, Oxindine, Seitz, Snyder (Emerita, WSU-Lake Campus)

Lecturers: Bertsch, Blakelock, Cassel, Chesire, Dickey, Rubin, Sayer, Wharton

The English major provides a balanced program of introductory and advanced work in English and American literature, world literature in English, English language and linguistics, and writing. The program offers students the chance to engage in a major humanistic discipline, the study of literature, which is challenging and enriching in itself. The English major also provides sound professional training for those interested in high school or college teaching, the teaching of English as a second language, business or technical writing, or graduate work; and the program is an excellent background for students entering professional schools or planning business careers.

The English major offers five concentrations (specified below), which have been designed to meet the needs of students with a general interest in literature and of those with special interests in writing or teaching. Students seeking a strong background in literature, history, theory, and analysis should take the general concentration in English, which combines the historical and critical study of literature with innovative approaches to critical methods, women's studies, nontraditional literatures, and non-Western literature in English. The concentration in English with an emphasis on creative writing offers students a full series of introductory and advanced creative writing courses. The concentration in English with an emphasis on professional writing gives interested students a strong combination of literature and professional writing instruction, including course work in business and technical writing and journalism.

The concentration in English with an emphasis on TESOL (Teaching English to Speakers of Other Languages) provides a combination of advanced work in applied linguistics with training in current methods of language teaching.

Finally, the concentration in English with an emphasis on Integrated Language Arts offers a combination of courses in literature, communication, language study, and pedagogy for students interested in seeking licensure to teach English and language arts in middle school or high school.

In choosing electives, students should try to select, in consultation with the departmental advisor, courses that complement their major interest and form a coherent unit of study, or courses that provide an appropriate career-oriented concentration.

Degree Requirements—English

Bachelor of Arts Degree

General Concentration in English

General Education Requirements 57

English Major Requirements 56

ENG 250, 251 8

ENG 351 or 352; 353 or 354; 355 or 356 or 357; and one more from the ENG 350 through 359 group 16

Four of the following courses, each from a different category:

ENG 410, 420, 430, 440, 450, 460, 470 16

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

One course in linguistics (ENG 478 or 479) 4

Foreign Language and Research Methods Requirement 32

Electives 47

Total 192

Concentration in English with an Emphasis on Creative Writing

General Education Requirements 57

English Core Requirements 32

ENG 250, 251 8

ENG 351, 352, 353, 354 (one course); ENG 355, 356, 357 (one course); and one other course from the ENG 350 through 359 group 12

Two of the following courses, each from a different category:

ENG 410, 420, 430, 440, 450, 460, 470 8

One course in linguistics (ENG 478 or 479) 4
Creative Writing Requirement 24
Two of the following:
ENG 302, 303, 304 8
Two or three courses from the following:
ENG 392, 393 (each course may be taken once or twice) 8–12
One or two courses from the following:
ENG 492, 493 (each course may be taken once or twice) 4–8

Foreign Language and Research Methods Requirement 32
Electives 47
Total 192

Concentration in English with an Emphasis on Professional Writing

General Education Requirements 57
English Core Requirements 32
ENG 250, 251 8
ENG 351, 352, 353, or 354 (one course); ENG 355, 356, 357 (one course); and one other course from the ENG 350 through 359 group 12
Two of the following courses, each from a different category:
ENG 410, 420, 430, 440, 450, 460, 470 8
One course in linguistics (ENG 478 or 479) 4

TESOL Requirements 24
ENG 481, 482, 483, 484, 485 20
ENG 478 or 479 (whichever was not taken as part of core requirements above) 4

Related Requirement 4
ED 458 or ED 460 4
Foreign Language and Research Methods Requirement 32
Electives 47
Total 192

Integrated Language Arts/English Education

Students who wish to teach English or Language Arts in Ohio public high schools should pursue the B.A. in English with a Concentration in Integrated Language Arts (the curriculum is listed immediately below). Upon completion of this undergraduate degree program in the College of Liberal Arts, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State’s College of Education and Human Services.

Graduates of the B.A. in English/Integrated Language Arts and the Professional Educators Program are then eligible to seek licensure from the Ohio department of Education in Adolescent/Young Adult Integrated Language Arts.

Requirements for admission to the PEP program include a minimum GPA, admission testing, and interviews. Throughout their undergraduate work, students should consult regularly with their advisor in the College of Education and Human Services to ensure that they are meeting requirements to enter the PEP program.

Concentration in English with an Emphasis on Integrated Language Arts/English Education

General Education Requirements 57
English Core Requirements 32
ENG 250, 251 8
ENG 351, 352, 353, 354 (one course); ENG 355, 356, 357 (one course); and one other course from the ENG 350 through 359 group 12
Two of the following courses, each from a different category:
ENG 410, 420, 430, 440, 450, 460, 470 8
One course in linguistics (ENG 478 or 479) 4
Two courses from the following:
ENG 410, 420, 430, 440, 450, 460, 470 8

One course in linguistics (ENG 478 or ENG 340) 4

(Note: It is strongly recommended that literature courses selected include works by Shakespeare, diverse female writers, and writers of color and/or ethnic diversity.)

Language Arts requirements 24
ENG 341, ENG 345, ENG 346, ENG 385 16
ENG 486 4

One course from the following:
ENG 462, ENG 454, ENG 470, ENG 476, ENG 483, ENG 485 4

Co-Requisites 29
COM 101, 152, 200 10
COM 256 or 411 4
ED 221, 223, 301, 303, 333 15

Foreign Language and Research Methods Requirement 32

Electives 18

Total 192

English Honors Program

The honors program in English is designed to encourage and recognize superior academic accomplishments by English undergraduates. With the approval of the chair of the English department and the departmental honors advisor, students who meet the eligibility standards may enter the English honors program before the beginning of their senior year. Students may be admitted to the program on the recommendation of any member of the English department faculty, or students may petition to enter the program. Under the direction of a faculty tutor, students in the honors program will complete an honors project that culminates in their writing an honors thesis or project report. For further information on eligibility and enrollment, students should consult the departmental honors advisor.

Certificate Program in Professional Writing

A certificate in professional writing is available to all students who successfully complete six courses from a list of approved writing courses (21–23 hours total). The certificate program can supplement any of the three English concentrations or any other major. The courses in the program prepare students for careers as writers in business and related fields, as journalists, and as editors. Interested students should contact the departmental advisor or the director of writing programs for further information.

Certificate Program in Technical Writing

A certificate in technical writing is available for students with a strong scientific or technical background who wish to learn and practice the writing skills that business and science demand today. Students must complete five courses and an internship, and may take the program as a supplement to any major. Interested students should contact the departmental advisor or the director of writing programs for further information.

Certificate Program in TESOL

The English department offers a certificate program in Teaching English to Speakers of Other Languages. Five courses and a practicum provide the requisite knowledge of linguistics and TESOL theory and methods. Interested students should contact their departmental advisor or the director of TESOL for further information. For information about the Endorsement in TESOL, the public school credential, interested students should contact the College of Education and Human Services or the director of TESOL.

Geography

See Urban Affairs and Geography.
History

Professors Dorn, Haas, Spetter
Associate Professors Arbagi, Carrafiello, Carlson (WSU-Lake Campus), Garnier, Green, Lockhart, Melton, Sherman, Sumser, Vice, Yuan
Assistant Professor Wachtell (chair)

The undergraduate major in history exposes students to a broad spectrum of human experience in the past and present, arming them with an understanding of the self and of their relationship to other human beings and to the structure of society. History 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 elective courses in other departments, students gain a broad liberal arts education and enlarge their historical perspective. The history major can thus be used generally by students who wish to be useful members of the community, and specifically by students who seek careers in teaching, journalism, library and archival work, government, politics, law, and business. The program also provides a sound basis for students planning to pursue graduate study.

Students in the history program are assigned an academic advisor who assists them with academic routines, selecting individual courses, and developing undergraduate and postgraduate goals. Students interested in careers in law, public service, journalism, or business should consult with the advisor about departmental programs particularly geared to those fields.

 Majors are expected to maintain at least a 2.0 GPA in history for graduation.

Degree Requirements—History

Bachelor of Arts Degree

General Education Requirements 57

Departmental Requirements 50

United States History: 14
HST 211, 212 (six hours)
Upper division (eight hours)
Non-American history 16
Two courses in European History (eight hours)
Two courses in Third World History (eight hours)
History 301 Research Seminar (four hours) 4
Area of Concentration (Choose either US, European, or Third World) 8
Elective Upper division History (eight hours) 8

Related Requirements† 24

Foreign Language and Research Methods Requirement 24–32

Electives 29–37

Total 192

*General Education history courses, HST 101, 102, and 103, are not counted toward departmental requirements.
†A minimum of 12 hours must be taken in one field, and all related course work must be taken in consultation with the history department’s advisor. Courses taken to meet General Education requirements cannot be counted toward Related Requirements. A minor field in another department can be taken in lieu of the Related Requirements with the approval of the department’s advisor.

History Honors Program

The honors program allows qualified students to carry out independent research under the guidance of a faculty sponsor. Departmental honors are awarded at graduation based on the student’s completing the following: at least one interdisciplinary honors seminar: HST 400 (with a grade of A or B); a 3.5 GPA in history and a 3.0 GPA 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 advisor.

Minor in History

The minor in history will benefit students majoring in disciplines such as religion, classics, political science, and literature. Students minoring in history will acquire the historical background and learn the critical and analytical techniques used by historians.

The history minor consists of 30 hours of course work, excluding courses taken for General Education.

Departmental Requirements 30

American history: HST 211, 212
Three upper division courses, one each in the following:
American history
European history
Third World history
Twelve hours of upper division course work in an area of the student’s choice to be selected in consultation with an advisor
International Studies

Director Donna M. Schlagheck

The international studies major offers students the opportunity to study international politics, culture, and society. The major combines intensive study of a foreign language with an interdisciplinary curriculum of study chosen by a student in consultation with a faculty advisor.

The Bachelor of Arts degree program in international studies consists of three parts: three years of study of one foreign language; the major core courses, which include introductory work in art history, economics, geography, political science, and religion; and work in a specialized track.

The specialized tracks in the international studies major provide five options: international diplomacy; area studies; comparative cultures; international economics; and global gender studies. The international diplomacy and peace studies track includes courses in political science, communication, and history. The area studies track allows students to focus on a global region (e.g., Africa or Latin America) and includes classes in anthropology, history, humanities, and political science. The comparative cultures track includes courses from anthropology, classics, English, history, humanities, philosophy, political science, and religion. The international economics track focuses on global economic concerns, with supporting course work in history, political science, and sociology. The global gender studies track incorporates a gender-analysis approach to diplomacy, area studies, comparative cultures, and international economics.

Study abroad opportunities in Australia, Chile, Costa Rica, England, France, Germany, Italy, Japan, Spain, and Thailand are available through the University Studies Abroad Consortium, of which Wright State is a member. Sister universities in Brazil, China, and Japan also offer cultural exchange programs in the summer. Study abroad and cultural exchange can be arranged through the International Student Exchange Program, E190 Student Union.

Although this is not a requirement for an international studies degree, students will find that studying abroad will greatly enrich their educational experience, as will exposure to a foreign culture and peoples. In order to have adequate language preparation, students interested in studying abroad should design their course of study well in advance of their trip.

Students interested in careers in government, international business, teaching, or journalism should contact the director of the international studies major. The major program also provides sound preparation for students interested in graduate work in law, the humanities, or the social sciences.

Degree Requirements—International Studies

Bachelor of Arts Degree

General Education Requirements 57

Foreign Language and Research Methods Requirements 44

Twelve hours minimum at the 300 level, or demonstrated proficiency at the level of 312 or 322 and three research methods courses.

Major Core Requirements 18

Art History, 1850
Comparative Economics
World Geography
International Politics
World Religions

Major Specialized Track 28–58

Total course work in the core and specialized tracks may not exceed 76 hours. Course work numbered 300 or above should be emphasized. Close consultation with and approval of the major advisor is required.

Choose one:
  - International Diplomacy and Peace Studies
  - Area Studies
  - Comparative Cultures
  - International Economics
  - Global Gender Studies

Total (core and specialized track) 46–76

Electives 15–45

Total (minimum) 192

National Honor Society

International studies majors may become eligible for election to Phi Beta Delta, the honor society for international scholars. For more information, interested students should see the director of the program.
Modern Languages

Professors Garrison, Horn, Hye, Maultal, Whissen (chair)
Associate Professor O’Brien, Petrenman
Assistant Professors Caldwell, Cannon (Emerita)
Lecturer Douglas, Haritos

The contributions of foreign language study to international understanding and world peace, and the value of language literacy to a liberal education, have long been recognized. The foreign language program combines 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.

Students who wish to teach French or Spanish in Ohio public schools can pursue the B.A. degree in the respective major. Upon completion of this undergraduate degree program in the College of Liberal Arts, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State’s College of Education and Human Services. Graduates of the B.A. in French or Spanish and the Professional Educators Program are then eligible to seek licensure from the Ohio Department of Education for the Pre-K–12 Multi-Age License.

Requirements for admission to the PEP program include a minimum GPA, admission testing, and interviews. Throughout their undergraduate work, students should consult regularly with an advisor in the College of Education and Human Services to ensure that they are meeting requirements of the PEP program.

In addition to major and minor programs in French, German, and Spanish, the department offers basic courses in Chinese, Danish, Italian, Japanese, Portuguese, Russian, comparative literature, foreign cultures, literature in translation, and linguistics.

Placement

Students with fewer than two years of a foreign language in high school or a grade of “C” or lower are advised to enroll in FR or GER or RUS or SPN 101, 102, 103 for credit.

Students who have studied a foreign language for two or more years and received an average grade of “B” or better may not take 100-level foreign language courses for credit; they must enroll in FR or GER or SPN 201.

Students with three or four years of high school foreign language may place themselves in FR or GER or SPN 311 or 321.

Proficiency

Proficiency credit may be earned in two areas: 300-level conversation courses (4 credit hours) and 300-level composition courses (8 credit hours).

Degree Requirements—French

Bachelor of Arts Degree

General Education Requirements 57

College Research Methods 12

Departmental Requirements 58

FR 201, 202, 203; 311, 312 20

FR 321, 322, 323, 331, 332 20

FR 361 2

French Electives (300- and 400-level courses) 16

Related Requirements 24

CPL 310 4

LI 371 4

ML 301, 302, 303, 304, 305, 306 8

(Students should choose the culture course related to their field plus at least one other culture course.)

ML 311, 312, 313, 314, 315, 316 8

(Students should choose at least two literature courses in translation outside their own field.)

Electives 41

Total 192
Modern Languages

Professors  Garrison, Horn, Hye, Mattual, Whissen (chair)
Associate Professor  O’Brien, Petreman
Assistant Professors  Caldwell, Cannon (emerita)
Lecturer  Douglas, Haritos

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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.

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In addition to major and minor programs in French, German, and Spanish, the department offers basic courses in Chinese, Danish, Italian, Japanese, Portuguese, Russian, comparative literature, foreign cultures, literature in translation, and linguistics.

Placement

Students with fewer than two years of a foreign language in high school or a grade of “C” or lower are advised to enroll in FR or GER or RUS or SPN 101, 102, 103 for credit.

Students who have studied a foreign language for two or more years and received an average grade of “B” or better may not take 100-level foreign language courses for credit; they must enroll in FR or GER or SPN 201.

Students with three or four years of high school foreign language may place themselves in FR or GER or SPN 311 or 321.

Proficiency

Proficiency credit may be earned in two areas: 300-level conversation courses (4 credit hours) and 300-level composition courses (8 credit hours).

Degree Requirements—French

Bachelor of Arts Degree

General Education Requirements 57

College Research Methods 12

Departmental Requirements 58
FR 201, 202, 203, 311, 312 20
FR 321, 322, 323, 331, 332 20
FR 361 2
French Electives (300- and 400-level courses) 16

Related Requirements 24

CPL 310 4
LI 371 4
ML 301, 302, 303, 304, 305, 306 8
(Students should choose the culture course related to their field plus at least one other culture course.)
ML 311, 312, 313, 314, 315, 316 8
(Students should choose a translation literature course in translation outside their own field.)

Electives 41

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 32 credit hours selected from courses at the 200 level or above (excluding LI 371, 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, 202, 203</td>
<td>12</td>
</tr>
<tr>
<td>SPN 311, 312</td>
<td>8</td>
</tr>
<tr>
<td>SPN 321, 322, 323</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
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</tbody>
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Motion Pictures

See Theatre Arts.

Music

**Professors** Bland, Dregalla (chair)

**Associate Professors** Dahlman, Larkowski, Laws, Leung, Nelson, Tipps

**Assistant Professors** Booth, Ellis, Jagow, Paul, Warrick

The Department of Music offers a four-year curriculum designed for students who wish to pursue a career in music. As a full member of the National Association of Schools of Music, the department has designed the requirements for entrance and graduation according to the published regulations of that association. The Bachelor of Music degree is offered with majors in performance, music education, and music history and literature; 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, students are required to consult with an advisor to plan their major program.

In addition to fulfilling university admissions procedures, prospective music majors must also complete a departmental application for an audition, perform a satisfactory audition in a major performance area, and meet with an assigned advisor from the music faculty for counseling and registration. 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 is required of all transfer students working toward a degree.

The department has developed a course of study based on four levels of technical proficiency, musicianship, and repertoire in all areas of applied music. Students should consult regularly with their applied music instructors and advisors to ensure progress through the various levels. Students enrolled in applied music courses are required to attend a specified number of recitals, concerts, and other approved performances. Solo recital performances are also required of music majors. For information regarding applied music requirements and keyboard proficiency requirements, students should refer to the Undergraduate Studies in Music student handbook.

Because of the cost of individual instruction, special quarterly fees are charged for applied music. Applied music is also available to nonmajors on a limited basis and subject to instructor availability. A rental fee is charged for use of university-owned instruments in class instruction. There is no charge for use of these instruments in university ensembles.

All music degree programs require a minimum number of hours for graduation. A detailed, four-year curriculum outline for each major program is available in the Department of Music office.

All students in the university, as well as members of the community, are eligible to participate in performing groups. Some groups require individual auditions; prospective members should consult the various conductors to arrange auditions. The following instrumental groups are available: University-Community Orchestra, Chamber Orchestra, Concert Band, Wind Symphony, Chamber Winds, Pep Band, Clarinet Choir, Saxophone Quartet, Brass Choir, and Jazz Band. Choral groups include the University Choir, Men’s Choir, Women’s Choir, Madrigal Singers, and Paul Laurence Dunbar Choir. Students majoring in other academic areas and members of the community may also take music courses especially designed for the nonmusic major.

Degree Requirements—Performance

**Bachelor of Music Degree**

The department offers majors in the following areas of performance: bassoon, clarinet, classical guitar, euphonium or baritone horn, flute, harp, horn, oboe, organ, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, violoncello, and voice. With departmental permission, students may major in fields other than those listed. Students must study continuously in their chosen disciplines until they meet all graduation requirements, including satisfactory public performance of specified recitals during the junior and senior years.
Each music performance major is required to participate in at least one university ensemble related to the student’s applied music concentration during each quarter in which the student is enrolled full time. Choice of ensemble must be approved by the appropriate ensemble director, director of bands, director of choral studies, or director of orchestral studies, and the student’s full-time applied instructor. When the student’s applied instructor is not a full-time faculty member, approval must be given by the chair of the student’s applied board.

To be eligible for the Bachelor of Music degree, the performance major must have a minimum cumulative GPA of 3.0 in the major performing medium and a 2.0 in all other required music courses.

General Education Requirements

Required substitutions:
MUS 121, CST 240 (Music in NW Culture) 6

Departmental Requirements 40

MUS 101, 102, 103; 201, 202, 203; 151, 152, 153; 251, 252, 253; 311, 312, 313, 342, 343, 465

Performance Area Requirements 98–116

Voice 116
MUS 441, 442; 455, 456, 457; 420, 261, 262; 111, 112, 113; 155, 156, 157; 255, 256, 257 31
Italian 12
French or German 8
MUA Applied Voice 42
Chorale Ensembles 12
Electives 12

Piano 102
MUS 401; 451, 452, 453; 301; 335, 336, 316, 317; 105 (three), 205 (five), 168 or 170 (two); 193, 194, or 195 (two) 36
Foreign Language 12
MUA Applied Piano 42
Electives 12

Organ 99
MUS 441, 442; 301; 335, 336, 337; 205, 257 15
Religion Elective 3
Foreign Language 12
MUA Applied Organ 42
MUA Applied Voice 6
Chorale Ensembles 9
Electives 12

Strings 101
MUS 441, 442; 301; 335, 336, 338; 205, 215, 216, 217, 155, 156, 157, 255, 256, 257; 105 29
MUA Applied Strings 42
Ensembles (135) 12
Electives 18

Woodwinds 101
MUS 441, 442; 227, 228, 229; 301; 335, 336, 338; 135 or 168; 205; 155, 156, 157; 255, 256, 257 30
MUA Applied Woodwinds 42
Ensembles 12
Electives 17

Brass 104
MUS 441, 442; 335, 336, 338; 205 or 235; 135; 168; Secondary brass study: one or two instruments; 155, 156, 157, 255, 256, 257 38
MUA Applied Brass 42
Ensembles 12
Electives 12

Percussion 112
MUS 441, 442, 335, 336, 338, 205/235 (five); 155, 156, 157, 255, 256, 257, 301 25
MUA Applied Percussion 54
Ensembles (115, 135, 168) 27
Electives 6

Classical Guitar 98
MUS 441, 442, 335, 336, 338; 301; 205, 215, 216, 217, 155, 156, 157; 255, 256, 257 32
MUA Applied Guitar 42
Electives 21

Degree Requirements—Music Education

Bachelor of Music Degree

Students who major in music education may choose either an instrumental or a vocal-general music curriculum. Upon completing the requirements of the music education program, which include the requirements of the Ohio Board of Education, students receive the Ohio Provisional Certificate for teaching music and are able to apply for Teaching Licensure. To be eligible for the Bachelor of Music degree, music education majors must have a minimum cumulative GPA of 3.0 in required music education courses and a 2.5 GPA in all other required music courses. An overall minimum cumulative GPA of 2.5 is required.

Students planning to major in music education will be placed in the “Music: Unspecified” category until the following requirements have been met: a) satisfactory completion of MUS 101, 102, 151, 152, 155, 156, and two quarters of applied concentration and ensemble study; b) minimum grade of “C” in applied and ensemble studies for two consecutive quarters; c) no failing grade in music courses during two consecutive quarters; and d) minimum cumulative GPA of 2.5 in total course work after the completion of 30 quarter hours.
Each music education major is required to participate in at least one university ensemble related to the student’s applied music concentration during each quarter in which the student is enrolled full time, with the exception of the quarter in which the student is student teaching. Choice of ensemble must be approved by the appropriate ensemble director, director of bands, director of choral studies, or director of orchestral studies, and the student’s full-time applied instructor. When the student’s applied instructor is not a full-time faculty member, approval must be given by the chair of the student’s applied board.

Three hundred hours of field observation and clinical experiences are required prior to student teaching.

During the senior year, all students will perform in student recitals two or three times for a total of 25 to 30 minutes. With the approval of the studio teacher and the applied music board, students may present a half recital or a full recital in lieu of this requirement.

General Education Requirements 57

Required substitutions:
MUS 121, CST 240 (Music in NW Culture) 6

Departmental Requirements 33

MUS 101, 102, 103; 201, 202; 203; 151, 152, 153; 251, 252, 253; 311, 312, 313

Major Requirements 45-47

MUS 155, 156, 157; 255, 256, 257; 342, 343; 465; ED 221, 223; 301, 303; 419, 440; EDS 333; COM 101

One of the following programs: 65-87

Band or Orchestral Instrument Concentration 70

MUA applied music concentration 22

MUS 105 (2 hours); 145, 205; 215, 216, 217; 224, 225, 226; 227, 228, 229; 231, 223 or 329, 323, 328, 335, 336, 338 35

Ensembles 11

Music electives 2

Piano or Classical Guitar Concentration with Band or Orchestral Instrument Secondary 86

MUA applied music concentration 22

MUA applied music secondary (audition required) 11

MUS 100 (if guitar); 105 (2 hours); 145, 205; 215, 216, 217; 224, 225, 226; 227, 228, 229; 231, 223 or 329, 323, 324, 328; 335, 336, 338 39

Ensembles 11

Music electives 2

Voice Concentration with Piano Secondary or Piano or Organ Concentration with Voice Secondary 65-71

MUA applied music concentration 22

MUA applied music secondary (if piano is concentration) 11

MUA applied music secondary (if voice is concentration) 5

MUS 111, 112, 113; 215, 224 (special section); 227, 231, 257 (if piano); 261, 262; 328, 329, 322; 335, 336, 337 27

Music electives 1

Ensembles 11

Music History and Literature

The major in music history and literature is not a terminal degree, and students should expect to continue at the graduate level. Therefore, students should consult with the appropriate faculty advisor before entering.

Students planning to pursue this major will be placed in the “Music: Unspecified” category until the following requirements have been met: a minimum grade of “C” in MUS 121 and completion of MUS 103 and 153.

Students majoring in music history and literature must complete level III in the applied music concentration and pass all keyboard proficiency requirements. Students must maintain a minimum cumulative GPA of 3.0 in required major courses, and 2.0 in other required music courses. Senior students are required to complete a senior project. The project may consist of an extensive written research paper or a scholarly lecture or lecture/recital.

Degree Requirements—Music History and Literature

Bachelor of Music Degree

General Education Requirements 57

Required substitutions:
MUS 121, CST 240 (Music in NW Culture) 6

Departmental Requirements 33

MUS 101, 102, 103; 201, 202; 203; 151, 152, 153; 251, 252, 253; 311, 312, 313

Major Requirements 78

MUS 301, 314; 342, 343, 465 14

Music literature 12

Ensemble 12

Conducting: MUS 335, 336; 337 or 338 6

French, German, or Latin (202 level) 20

MUS 481 (senior project) 6

Electives 8

MUA applied music concentration 22

MUA applied music secondary (if piano is concentration) 11

MUA applied music secondary (if voice is concentration) 5

MUS 111, 112, 113; 215, 224 (special section); 227, 231, 257 (if piano); 261, 262; 328, 329, 322; 335, 336, 337 27

Music electives 1

Ensembles 11
One of the following performance concentrations

*Keyboard*
- MUA applied music
- MUS 257

*Non-keyboard*
- MUA applied music
- MUS 155, 156, 157, 255, 256, 257

**Degree Requirements—Music**

**Bachelor of Arts Degree**

The Bachelor of Arts degree in music is designed for students who want to study music, but do not necessarily plan a professional career in music. Students will get a much broader, more general education than students seeking a Bachelor of Music degree. Required courses are kept to a minimum. Consequently, students must work closely with an advisor in selecting course electives. For graduation, students must complete the 200 level in the applied music concentration.

General Education 57

Required substitutions:
- MUS 121, CST 240 (Music in NW Culture) 6

Departmental Requirements 71

- MUS 101, 102, 103; 201, 202, 203; 151, 152, 153; 251, 252, 253; 311, 312, 313; 341; 314; 155; 156; 157 (non-keyboard concentration only; keyboard concentration substitute music electives)
- MUA applied music concentration 12
- Music electives 17

Related Courses 12

- Nine hours in one of these fields: anthropology, art, classics, economics, history, literature, mathematics, philosophy, religion, or sociology
- Foreign Language and Research Methods Requirement 24–32
- Electives (nonmusic) 20–28

Total 192

**Music Honors Program**

The Department of Music encourages students who have demonstrated superior academic ability to participate in the music honors program. In order to enter the program, students must be juniors or seniors with a cumulative 3.0 GPA and a 3.5 GPA in music. For additional information, students should contact the department chair.

**Minor in Music**

Thirty-nine credit hours of study are required:

*Music Theory*
- MUS 101, 102, 103; 151, 152, 153 12

*Music History and Literature*
- MUS 121; 311, 312, 313; 465 15

*Performance*
- MUA applied music 6–12
- Ensemble 6

Completion of the minor also requires a minimum GPA of 2.25 in music courses.

**Philosophy**

Professor Taylor

Associate Professor Hough (chair), Irvine

Assistant Professor Beelick

The philosophy major is designed to encourage clear and logical thinking about problems that philosophers attempt to solve. It develops students’ ability for critical evaluation through analysis and appreciation of such attempts, and increases students’ cultural experience by acquainting them with the more important philosophic writings.

The 52 hour requirement in the major affords a great deal of flexibility; it enables students to employ numerous options in other disciplines to prepare for different professional objectives, while also developing a broad understanding of our society and culture. It is 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 own curricula, courses in the philosophy of their disciplines. Furthermore, philosophical questions can arise during one’s investigation of any specific field.

Because of differences in student interests and the ready availability of electives, each student follows an individualized program in consultation with an advisor. Such a program permits concentration in cognate fields and encourages exploration and self-discovery.
Because 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 intend to pursue further training in professional disciplines such as law, medicine, and theology, and for those who plan advanced study in philosophy.

Philosophy majors who have demonstrated excellent ability in philosophy courses may be eligible for the rigorous departmental honors program. Interested students may obtain further information from the departmental office.

Degree Requirements—Philosophy

Bachelor of Arts Degree

General Education Requirements 57
Departmental Requirements 52
Electives and Related Courses 51–59
Language and Research Methods Requirement 24–32

Total 192

Political Science

Professors Funderburk (chair), Moore, Schlagheck, Walker
Associate Professors Adams, Fitzgerald, Green, Runyan, Sirkin
Assistant Professors Coughlan, Snipe

Students of political science study governments: how they evolve, why they exist, the forms and social functions they assume, why they change, and who controls them. To understand governments, students of political science also study politics: how people behave in their relationship to government, what they do to influence government, and how government attempts to influence people's behavior and beliefs about what it does. Students of politics also must appreciate how cultural, historical, and economic forces affect the evolution of governments and mass political behavior.

The Bachelor of Arts program in political science focuses on three areas of instruction:
1. American government, including legislative and executive institutions, political parties and interest groups, public administration, public opinion and elections, and state and urban government; public law, including constitutional law, criminal justice, civil liberties, and environmental law;
2. International relations and comparative politics, including American and Soviet-Post-Soviet foreign policy; Western European and Latin American governments; the Middle East, East European, Russian, and Asian governments; African politics; national security policy; terrorism; international political economy; and developing political systems;
3. Political philosophy theory and analysis, including feminist theory, political philosophy, political ideologies, the history of political thought, and political analysis; and quantitative methods of political research.

Student Internships and Applied Politics

Internships for political science majors may be arranged with area state legislators, congressional district offices, Dayton-area metropolitan governments, and governmental and policy advocacy agencies and organizations in Washington, D.C. These internships complement classroom work and give students the chance to apply knowledge and develop valuable interpersonal and career-related skills. The department sponsors student participation on our nationally recognized, award-winning team attending the annual National Model United Nations meeting in New York.

Degree Requirements—Political Science

Bachelor of Arts Degree

General Education Requirements 57
Foreign Language and Research Methods Requirement 24–32
Departmental Requirements 60
Core Requirements (two courses) 8
Prerequisite: PLS 200, 212, 222
Area Requirements 20
Prerequisite: Core Requirements
1. American Government (two courses, eight hours)
2. International and Comparative Politics (two courses, eight hours)
3. Political Philosophy, Theory, and Analysis (one course, four hours)
Advanced Department Electives 32
Prerequisite: Core Requirements
Thirty-two quarter hours chosen in consultation with a departmental advisor among 300- and 400-level courses with no fewer than four hours at the 400 level
Related Major Requirements from Outside the Department 21–23
There are two options. Option 1 must be completed in full by all political science majors who do not choose and complete in full a departmentally approved alternative of at least 21 credit hours.

Option 1
One English course from among the following:
ENG 240, 330, 333, or 344 3–4
HST 211 and 212 6
EC 201, 202, and 203 9
GEO 201 or 202 3

Option 2
Option 2 may be the international economics certificate program, the business minor for liberal arts majors, a minor or second major in another field, or a set of courses from another discipline with a clear focus and coherence reflecting the individual's career or other interests. Transfer students from Sinclair Community College may apply LAP credits toward "legal affairs" related requirements. Other transfer credits also may be applied toward completion of the requirement. In all cases, Option 2 must have advisor approval and requires at least 21 credit hours.

Free Electives 24–30

Total (minimum requirement) 192

Minor in Political Science

Students majoring in other fields, particularly other social sciences, may benefit from a minor in political science. The minor is especially helpful to students in journalism, business students interested in international business and finance, students in education, and anyone pursuing a career where a basic understanding of political institutions and processes would strengthen other program interests. Completion of the approved minor is certified on students' official transcript upon graduation.

The minor may be fulfilled by completing the following requirements.

The Political Science Minor: 32

Core Requirements (8 hours) Prerequisite:
Political Life — PLS 200, 212, 222
Area Requirements (12 hours)
Prerequisite: Core Requirements
1. American Government (one course, four hours)
2. International and Comparative Politics (one course, four hours)
3. Political Philosophy, Theory, and Analysis (one course, four hours)
   Advanced Political Science Electives: Twelve hours distributed among 300- and 400-level courses chosen in consultation with a departmental advisor

Departmental Honors

Majors in political science may earn departmental honors by completing the following requirements:
1. Compiling a minimum GPA of 3.4 on all political science course work and in overall course work
2. Attaining senior standing
3. Completing the Model United Nations Seminar or a comparable limited enrollment advanced course with a grade of A or B (see the department chair for more information)
4. Completing the annual senior honors research seminar with a grade of A or B

By completing these requirements and the eight-course Honors Program requirement (described on page 17), majors may earn the designation "University Honors Scholar" upon graduation. Interested students should contact the University Honors Program for more information.

National Honor Society

Majors in political science may become eligible for membership in Theta Zeta Chapter of Pi Sigma Alpha, the national political science honor society. Interested students should see the department chair for more information.

Religion

Professors Barr, Griffin, Reece
Associate Professor Hough (chair)
Assistant Professors Chamberlain, Dvorak

The Bachelor of Arts program in religion is comprehensive and nonsectarian in its approach, and shares with other humanities disciplines the goal of understanding ourselves and our world. Since religion is a powerful force in culture, it has been heavily involved in most of the world's history, literature and art, and social institutions. The academic study of religion emphasizes the study of various religious traditions, their history, thought, social context, and moral and ritual expression.
A major in religion requires 14 courses within the department. Each student is assigned a departmental advisor who helps select courses. Students need to complete the sequence REL 205, 206, and 207 early in their program and take REL 497 near the end of their studies. In addition, a religion major requires one course from each of the following six areas: African American religion, American religion, Biblical studies, ethics or philosophy of religion, Eastern religions, and Western religions. Four elective courses, drawn from these areas or elsewhere in the department, complete the requirement of 14 courses. At least six courses must be at the 300 level or above.

Religion majors must also complete 28 hours of related courses selected from a wide range of disciplines related to their special interests. Students should consult with their departmental advisor in selecting these. Students will also 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 21 hours.

The department also provides a dual major (11 courses) and a minor (eight courses). See the department chair for complete details.

Graduates with a degree in religion choose employment in a wide variety of professions, including teaching, social services, counseling, law, ministry, and medicine. Technical training required for these fields usually follows the baccalaureate program, but students are encouraged to choose electives that support their career interests as soon as possible. Career planning information is available for religion majors.

**Degree Requirements—Religion**

**Bachelor of Arts Degree**

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>57</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>48–53</td>
</tr>
</tbody>
</table>

Fourteen courses to be chosen from:

- REL 205, 206, 207 9
- REL 497 4

Six additional courses, one from each area:

- African American Religion
- American Religion
- Biblical Studies
- Ethics or Philosophy of Religion
- Eastern Religions
- Western Religions 23–24

Religion electives 12–16

At least 24 hours must be at the 300 level or above.

Foreign Language and Research Methods Requirement 24–32

**Related Requirements** 28

Approved courses related to area of specialization

**Electives** 22–35

**Total (minimum requirement)** 192

**Religion Honors Program**

The Department of Religion encourages superior academic work through an honors program. Honors students take advantage of special seminars and discussion sections, departmental reading courses, and other opportunities. Relatively small classes also make it possible to work more closely with professors. Juniors and seniors with a 3.0 cumulative GPA 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.

**Minor in Religion**

A minor in religion enhances the student’s preparation for business, educational, and other professional fields. It also promotes a student’s self-understanding and cultural awareness, and enriches any college education. To earn a minor in religion, students fulfill the following requirements:

<table>
<thead>
<tr>
<th>Requirements</th>
<th>17–20</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL 205, 206, 207</td>
<td>9</td>
</tr>
<tr>
<td>Five additional courses in religion</td>
<td></td>
</tr>
</tbody>
</table>

**Total** 26–29

*At least 12 hours must be at the 300 level or above.

**Selected Studies**

**Director** Sharon H. Nelson

**Program Committee Coordinator** Robert A. Wood

The program in selected studies allows students to pursue a self-designed course of study. It is planned for students with a definite educational objective that is not met by the majors presently offered by the College of Liberal Arts. While the program is free from several traditional requirements, students must meet other requirements and procedures to obtain the degree.

Students are eligible for the program after they complete 45 credit hours. With the help of program sponsors, students formulate a contract outlining their study goals and reserving at least 48 credit hours for core courses that help accomplish those goals. The contract is evaluated and approved by the Program Committee.
In addition to completing the core and meeting all other university and college requirements for graduation, students must successfully complete at least 60 credit hours in courses numbered 300 or above; eight to 16 credit hours must be earned in LA 490, Senior Project in Selected Studies. Students must submit a proposal for the project to the program committee for approval before the beginning of their senior year.

A specially designed option in women's studies is also offered through the selected studies major program. Students complete at least 28 hours of required and elective course work in women's studies as part of the core requirements and a women's studies oriented senior project.

Students interested in selected studies should see the committee coordinator for more information about the program.

Degree Requirements—Selected Studies

Bachelor of Arts Degree

General Education Requirements 57
Core Courses 48
Senior Project (LA 490) 8–16
Foreign Language and Research Methods Requirement 24–32
Electives 39–55

Total (minimum requirement) 192

Ordinarily no more than 45 hours in one department may be counted toward the degree.

Degree Requirements—Selected Studies

Bachelor of Fine Arts Degree

General Education Requirements 57
Core Courses 48
Senior Project (LA 490) 8–16
Electives 71–79

Total (minimum requirement) 192

Ordinarily no more than a combination of 100 hours of course work may be taken in the Departments of Art and Art History, Music, and Theatre, and no more than 68 hours in any 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 Department of Communication and the Department of Sociology and Anthropology. The dual major is designed for students interested in organizational communication and who want, in addition, an in-depth understanding of the sociological influences that operate in organizations.

A graduate of this program will gain insight into the organizational world: how communication is used in the workplace, the role of the individual in an organization, and how to cope with organizational change.

Dual Major Degree Requirements—Social and Industrial Communication

Bachelor of Arts Degree

General Education Requirements 57
Departmental Requirements 72

Required courses:
COM 101, 102, 141, 446, and three of the following: COM 441, 443, 445, 447; SOC 303, 306, and two of the following: SOC 350, 440, 441 41

Major electives chosen from:
ATH 250; COM 333, 340, 343, 345, 346, 347, 401, 429, 448, 449, 451, 453, 455, 457, 489; SOC 201, 340, 341, 345, 348, 380, 406, 433, 442, 444, 446, 450; or other approved courses 31

Foreign Language and Research Methods Requirement 24–32
Electives 31–39

Total 192
Social Science Education

Director Sharon H. Nelson
Coordinator Robert A. Wood

Students who wish to teach social science in Ohio public high schools can pursue the B.A. in Social Science Education. Upon completion of this undergraduate degree program in the College of Liberal Arts, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State's College of Education and Human Services. Graduates of the B.A. in Social Science Education and the Professional Educators Program are then eligible to seek licensure from the Ohio Department of Education in Integrated Social Studies.

Requirements for admission to the PEP program include a minimum GPA, admission testing, and interviews. Throughout their undergraduate work, students should consult regularly with their advisor in the College of Education and Human Services to ensure that they are meeting requirements to enter the PEP program.

Degree Requirements—Social Science Education

Bachelor of Arts Degree

General Education Requirements 54

Required Substitutions:
EC 201, 202, 203

Pre-Education Courses 15
ED 301, ED 303, EDS 333, ED 221, ED 223

Major Content Courses 95
HST 211, 212 6
American History (300/400-level) 8
European History (300/400-level) 4
Non-Western History (300/400-level) 8
History Electives (300/400-level) 8
GEO 201, 202, 203 9
PLS 212, 222 8
Political Science Electives (300/400-level) 16
SOC 204 3
Sociology Electives (300/400-level) 8
PSY 110, 351 8
EC 201, 202, 203 9

Foreign Language and Research Methods Requirement 24–32
Electives 0–4

Total (minimum requirement) 192–196

Social Work

Associate Professors Bognar, Brun, Curry-Jackson (chair), Engle
Assistant Professors Baker, Myadze

The Bachelor of Arts program in social work prepares students for beginning employment in social work or for graduate study. Students considering social work as a career should be interested in people of widely varying ages, abilities, and backgrounds; they need to be disciplined, emotionally stable, and intellectually creative. Social workers typically find employment in family services, children's services, public schools, hospitals, mental health centers, and probation and parole boards. While most social workers perform direct practice duties, others are employed as outreach workers, community organizers, and administrators in public, voluntary, and for-profit agencies. Newer fields are also opening up for social workers, such as services to older adults.

The baccalaureate program is fully accredited by the Council on Social Work Education.

Requirements for admission to the social work program include completion of SW 270 and 271 with a grade of "C" or higher, with an overall GPA of 2.25 or higher; related social science courses; human biology; and the writing portion of the Pre-Professional Skills Test. Applications are accepted two times per year: March 1 and November 1. Admissions to the social work major are selective. Not all persons meeting the minimum requirements can be accepted into the major. Students should see the department's academic advisor if they have questions about the application criteria.

To graduate with a social work degree, a grade of "C" or higher is required in all social work courses including SW 491 or the following accepted inferential statistics courses: STT 265, MS 202, or PLS 211.
Degree Requirements—Social Work

Bachelor of Arts Degree

General Education Requirements 57

Specific Courses:
Area Three—The Non-Western World:
CST 240 — Comparative Non-Western Cultures
Area Four—Understanding the Contemporary World:
BIO 107

Departmental Requirements 56
SW 270, 271, 375, 380, 470, 481, 482, 483, 484,
490, 491; SW 487, SW 488, SW 489 (field practicum)

Related Requirements 7
COM 102
PSY 341

Foreign Language and
Research Methods Requirement 24–32

Electives 40–48

Total (minimum requirement) 192

Social Work Honors Program

The Department of Social Work recognizes superior achievement by social work majors with an honors program that allows students to graduate with the designation of honors in social work. Students in the program have an opportunity to pursue original research and analysis that goes beyond the requirements of their course work.

Junior and senior students with a 3.0 overall GPA and a 3.5 average in social work may apply. Students must initiate and successfully complete an honors project. The department suggests that honors students take at least one UH 400 interdisciplinary seminar before starting their honors project.

Certificate in Gerontology

The certificate in gerontology program offers students academic preparation and practical experience in the growing field of gerontology:

- Knowledge about the consequences of the aging process (physical, social, and psychological) and the needs associated with the aging process throughout the life span
- Knowledge about current social and health policies, as well as programs developed to meet the increasing needs of older people

- Skills to work as a team member in an interdisciplinary setting designed to help older people
- Sensitivity about the values necessary to work with older people

Sociology and Anthropology

Professors Ballantine, Cargan (Emeritus), Cross (Emeritus), Islam, Melko (Emeritus), Riordan, Savells (Emeritus), Siegel, Welty (Emeritus)

Associate Professors Bellisari, Koebernick, Orenstein (Chair), Shepelak, Steinberg (WSU-Lake Campus)

Assistant Professors Bogumil, Durr, Murray (Emeritus), Steele, Wilcox

Lecturer Bush

Sociology

Sociology is concerned with social relations: how people relate to each other as individuals, in families, or in groups; how they communicate in business and governmental situations; and how their behavior is judged as socially acceptable, deviant, illegal, or immoral. The Bachelor of Arts program in sociology trains students to observe and measure these interactions, predict likely outcomes from certain situations, and determine how we can develop programs to change behavior for the good of individuals and society.

Sociology graduates typically find careers that involve dealing with people, often working for large businesses or organizations or in community service, public relations, teaching, or research.

Sociology majors are required to take five or more upper-level courses designed to develop their writing skills and thinking capacity.

Degree Requirements—Sociology

Bachelor of Arts Degree

General Education Requirements 57

Departmental Requirements 59
SOC 201, 204, 301, 303, 306, 406, 442 25
Any two of the following:
SOC 320, 340, 345, 360, 380 8
300- to 400-level SOC electives (minimum) 20
Other SOC electives 6–15
Liberal Arts

Related Electives 12
Twelve hours in any single approved discipline at the 300-400 level.

Foreign Language and Research Methods Requirement 24–32
Electives 32–40

Total 192

Sociology Honors Program
The department encourages qualified students to conduct independent research through the department’s honors program. Students are eligible for the program if they have a GPA of 3.0 overall and 3.5 in sociology. Departmental honors are awarded at graduation. Under SOC 490, students must complete an honors project under the guidance of an honors advisor. Interested students should contact the departmental office for further information.

Minor in Sociology
The minor in sociology allows students to supplement their education in many fields. Students take SOC 306 (Sociological Methods) and five courses at the 300-400 level, four of them from one of the following concentrations: social organizations; deviance/criminology; social change; family/socialization. The minor requires a total of 28 credit hours.

Anthropology
Anthropology studies the behavior and biology of the human species, both current and past, often drawing on information from the social and biological sciences. The Bachelor of Arts program in anthropology focuses on three areas: cultural anthropology, archeology, and physical anthropology.

Cultural anthropology exposes students to ways of life, belief systems, and value systems that differ from their own, examining the ways in which cultures deal with universal human problems, from the basic needs of food and shelter to the metaphysical questions of existence. Typical subjects for cultural anthropology include ecology and subsistence techniques, economics, political systems, religion, and cultural change.

Archaeology deals with cultures of the past. Archaeologists search for and study the material remains of past cultural activity and try to reconstruct the behavior patterns, technology, and social customs of people who no longer exist.

Physical anthropology focuses on the biological aspects of the human species. Physical anthropologists study the fossil evidence to determine how evolution has influenced human behavior and biology. Studies of biological variability in modern populations are also part of this discipline, since many physical differences among populations are the result of their having adapted to different environments.

Anthropology majors should normally complete the 200-level introductory courses before taking 300- or 400-level courses.

Degree Requirements—Anthropology

Bachelor of Arts Degree

General Education Requirements 57

Departmental Requirements 53
ATH 250, 241, 242, 448 13
Cultural electives 16
Archeology electives 12
Physical electives 4
Open elective 8

Within the archeology electives, students must choose at least one methods/theory course and one area course. ATH 369, Field School in Archeology, 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, 346, 349, 450

Related Requirements 24
Selected from economics, geography, history, political science, psychology, sociology, and certain courses from biological sciences, geological sciences, and communication

Foreign Language and Research Methods Requirement 24–32
Electives 26–34

Total 192

Anthropology Honors Program
The department encourages qualified students to conduct independent research through the department’s honors program. Students are eligible for the program if they have an overall GPA of 3.0 and an average of 3.5 in anthropology by the end of their junior year. Departmental honors are awarded at graduation. Under ATH 492, students are required to complete an honors project under the guidance of
a faculty honors advisor. Interested students should contact the departmental office for further information.

Minor in Anthropology

The minor in anthropology provides a cluster of courses that form an introduction to the subfields of anthropology. It is intended for students in other majors who wish to supplement their study with the perspectives unique to anthropology.

The minor in anthropology contains 29 credit hours. This includes 12 hours in three introductory courses (ATH 250, 241, 242) which expose students to the subfields of cultural and physical anthropology and archaeology. Upper-level courses are structured to allow students to examine the content of each subfield in greater depth. The required course in theory can be taken in either archaeology (ATH 468) or cultural anthropology (ATH 448).

Requirements for the Anthropology Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATH 250, 241, 242</td>
<td>9</td>
</tr>
<tr>
<td>Two courses from cultural anthropology</td>
<td>8</td>
</tr>
<tr>
<td>One course from: ATH 340, 346, 349, 450</td>
<td>4</td>
</tr>
<tr>
<td>One course from: ATH 341, 343, 344, 399, 446, 447</td>
<td>4</td>
</tr>
<tr>
<td>One course from archaeology</td>
<td>4</td>
</tr>
<tr>
<td>One course from physical anthropology</td>
<td>4</td>
</tr>
<tr>
<td>One theory course (ATH 448 or 468)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

Students are expected to maintain a 2.0 overall GPA.

Theatre Arts

**Professors** Blair, Derry, Klein, Reichert

**Associate Professors** Crews, Cromer, David, Donahoe, Johnson, Knaught Lavarnway, Lafferty, McDowell (chair), Rodriguez, Walker, White

**Assistant Professors** Benjamin, Deer, Lile, Sandberg

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. These programs lead 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 five B.F.A. degree programs has specific criteria for admission to each level of training. Students in all areas must earn a minimum GPA of 2.0 by the end of the freshman year to continue in a theatre arts major. Students who wish to be admitted as majors in acting, dance, or directing/stage management must successfully pass an audition or interview. Transfer students are admitted into B.F.A. programs on the basis of a successful audition, interview, or portfolio presentation. The department has an open admissions policy for students wishing to major in the B.A. programs in theatre studies and motion picture history, theory, and criticism, and B.F.A. programs in design/technology and motion picture production.

All students who return 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 they may be required to satisfy program requirements in effect at the time of readmission. Details of the admission and retention policy are detailed in the Department of Theatre Arts Student Handbook.

Dance

The program in dance is designed to train students for a career in performance, teaching, or choreography. This program combines theatrical and musical training that helps prepare dance students for either specialized careers in modern dance or in ballet companies, or for a career in the professional theatre as a dancer who sings and acts.

The foundation of the dance curriculum is a daily class in ballet technique with additional training in modern and jazz-theatre dance. Classes in choreography, dance pedagogy, and dance history are required. Seniors must complete an individually choreographed senior dance project. Required courses outside of dance include studies in theatre, acting, music theory, music literature, and singing.

All students must successfully audition for admission into the dance program. All transfer students are required to audition for acceptance and placement. To remain in the dance program, students must demonstrate continual growth as judged by the faculty, maintain a 2.5 GPA in all dance courses, and a 2.0 GPA overall. Dance faculty conduct evaluations at the end of each academic year; students must earn a positive recommendation before they can enroll for the next level of training.

Exceptional dance majors are selected to study and to perform as members of Dayton Ballet II or Dayton Contemporary II. These dancers are eligible for scholarships from the Theatre Arts Department.

Dance majors are required to audition for the Wright State Dance Ensemble. Other auditions may be required by the dance faculty for other performances, including lecture-demonstrations, choreographic presentations, dance tours, and dramatic and musical productions. Dance majors must maintain a minimum GPA of 2.0 to be eligible for graduation.
Degree Requirements—Dance

Bachelor of Fine Arts Degree

General Education Requirements 57

Required substitutions:
TH 214

Departmental Requirements 102

DAN 101, 102, 103, 111, 112, 201, 202, 203, 211, 212, 213, 251, 252, 253, 301, 302, 303, 311, 312, 313, 321, 322, 323, 341, 342, 343, 371, 372, 373, 399 (six hours), 401, 402, 403, 411, 412, 413, 421, 422, 423, 491, 492, 493

Related Requirements 24

TH 147, 148, 149
TH 105, TH 100 (five hours)
MUS 114, 117, 118, 214
Electives 9

Total 192

Motion Pictures

The program in motion pictures provides a study of film as a fine art. The curriculum offers two options: the Bachelor of Fine Arts degree in theatre with a concentration in motion picture production; and the Bachelor of Arts degree in theatre with a concentration in motion pictures history, theory, and criticism.

The B.F.A. Program

The B.F.A. program follows an open admission policy only for the first quarter; thereafter, students must progress according to department guidelines in order to continue. Prospective motion picture B.F.A. students must take TH 131 the fall quarter of their freshman year and receive an "A" or "B" in order to proceed to any other classes as a major. Students successful in TH 131 should register for TH 231 in the winter quarter. In order to be eligible to take TH 180 and TH 232 in the spring quarter, students must have completed 24 university credit hours, received a "C" or higher in TH 231, and achieved an overall GPA of 2.25 by the end of winter quarter.

At the end of the sophomore year, B.F.A. students must audition successfully for entrance into the junior and senior years of the program. This process is called the Junior Audition and is a comprehensive process involving multiple meetings with faculty and review of all work done in the program. Before students are accepted into the junior year, they must have a 2.5 GPA in all film history/theory classes and a 2.25 overall GPA. Students must also have completed six film history/theory courses, not including TH 131, and including TH 232 and 233, and have earned at least 85 credit hours. Students are required to submit original media work for faculty evaluation. To be accepted to the third year, students must show promise of benefitting from continuing education. In their third year, all production students are expected to demonstrate growth in film technique and earn additional credits in film history, theory, and criticism, as well as credits in General Education classes and electives.

The B.A. Program

Students who are interested in the B.A. program generally follow the same program of study for the first year as the B.F.A. students. Like B.F.A. students, B.A. students are required to take TH 281 and TH 282. At the end of the freshman year, B.A. students should indicate to the faculty their intention to return to the program. If places are available, they will be allowed into TH 281 and TH 282 the fall and winter quarter of their sophomore year. More likely, B.A. students will be guaranteed entry into TH 281 and TH 282, but not until their junior or senior year. A B.A. degree in motion pictures can be thought of as a general liberal arts degree preparing one for entrance into professions requiring knowledge of contemporary culture. More specifically, the B.A. degree can prepare one for graduate study in film and subsequent employment as a professional writer or teacher in a university; other job options include working for a film archive, festival, library, museum, arts council, or publisher.

Motion Picture Honors Program

The honors program in motion pictures provides students of superior academic ability with the opportunity to broaden and demonstrate their skills. To earn a degree with honors, students must complete the departmental major requirements, maintain a superior GPA throughout their course of studies, and successfully complete a senior honors project, TH 499, sometime in their senior year. To be admitted to the honors program, students must have a cumulative GPA of 3.5 in their major and an overall GPA of 3.25. Both B.A. and B.F.A. students should contact the coordinator of the motion pictures area or the department chair for further details.
Degree Requirements—Motion Picture History, Theory, and Criticism

Bachelor of Arts Degree
The Bachelor of Arts degree combines a liberal arts education with an appreciation of the aesthetic, social, and historical aspects of the film medium. Because film is a highly eclectic medium of expression, the department has designed a coordinated program of electives for the B.A. student.

General Education Requirements 57
Required substitutions:
ART 214 or TH 214 for art requirements

Departmental Requirements 61
MP 131, 180, 231, 232, 233, 334 19
Additional courses in motion picture history, theory, and criticism to be chosen from:
MP 331, 332, 333, 435 33
Additional production courses to be chosen from: MP 281, 282, 283, 381, 382, 383, 436, 499 9

Related Requirements 11
ART 207
MUS 214 or 121
One of the following:
EDT 455, COM 152, COM 253, 256, 360, 365 or appropriate substitute

Language and Research Methods Requirement 36
French or German recommended; must complete through 203 level. (Most other B.A. programs require foreign language through 202 level only.)

Electives 27
Note: No more than seven credits of electives may be from theatre, English, history, and art courses. Highly recommended.

Total 192

Degree Requirements—Motion Picture Production

Bachelor of Fine Arts Degree
The Bachelor of Fine Arts degree is designed to give students preprofessional training for vocations closely related to film and video production, while simultaneously giving them an opportunity to develop their creativity.

General Education Requirements 57
Required substitutions:
ART 214 or TH 214 for art requirements

Departmental Requirements 72
MP 131, 180, 222, 231, 232, 233, 281, 282, 283, 334, 381, 382, 383, 436, 481 51
Additional courses in motion picture history, theory, and criticism to be chosen from:
MP 331, 332, 333, 435 21

Related Requirements 24-26
ART 207, 258, 358 or 359
MUS 114, 121 or 214
Two of the following:
EDT 455, COM 152, 253, 256, 360, 365 or appropriate substitute

Electives 37-39
Note: There is no limit on the number of electives which may be theatre courses.

Total 192

Theatre
Students who wish to study theatre choose from professional programs leading to the Bachelor of Fine Arts degree, or from the Bachelor of Arts degree in theatre studies. The professional programs are acting, acting-musical theatre, and design/technology/stage management.

Admission for the acting program is by audition or interview. The department has an open admissions policy for first-term freshmen in the design/technology/stage management and theatre studies programs. Transfer students must audition or interview for all B.F.A. programs. Each B.F.A. program has set criteria for selectively retaining students in the programs. These include a requirement that students must earn a GPA of at least 2.0 to continue in the B.F.A. programs; most of the programs require a higher minimum GPA for graduation. The policies are spelled out in the following sections and in the Theatre Arts Student Handbook, which is issued annually. Students are required to consult quarterly with an academic advisor.

Degree Requirements—Acting and Acting-Musical Theatre

Bachelor of Fine Arts Degree
The professional acting and acting/musical theatre programs are an intensive, four-year progression of studies in acting, voice, movement, dance, and singing. Acting majors may choose an emphasis in musical theatre. Because courses in the
acting program follow a set sequence, students are generally admitted only in the fall quarter. The Professional Actor Training program is limited by audition only to selected, superior students who show promise of high achievement in acting and/or musical theatre. Retention in the Professional Actor Training program is determined by periodic review. Students are retained in the program based on their growth and development as judged by the acting faculty.

Students are retained in the program based on their growth and development as judged by the acting faculty.

Students are retained in the program based on their growth and development as judged by the acting faculty.

Degree Requirements—Design/Technology/Stage Management

Bachelor of Fine Arts Degree

The program in design/technology prepares students for careers as designers, technicians, and stage managers in the professional theatre. During the junior year, students begin a concentration in either design or technology in the fields of costumes, scenery, lighting, sound, or properties. Students interested in concentrating in stage management do so beginning in the freshman year. All design/technology majors must present their portfolio for an evaluation at the end of each year of study. Students are retained in the program and accepted into the sophomore year of study based on (1) their maintaining an overall GPA of 2.0, and (2) their continual growth as determined by the faculty and by a successful portfolio evaluation at the end of each year of study. Before students can begin their junior or senior year, they must have a 2.5 GPA on all design and technology classes and a 2.25 overall GPA. Students must also continue to show steady growth in their craft. Student must demonstrate leadership skills and self-discipline and show promise of benefiting from continued training. Any student whose overall GPA falls below 2.5 will be suspended from production, graphics, and design classes, and from using facilities until the GPA is raised. The faculty reserves the right to totally suspend a program any student who does not fulfill the continuing requirements. Students may be reinstated if the requirements are subsequently fulfilled. Students not performing in their academic or production assignments will be dropped from the program.

General Education Requirements

Required option:

TH 214

Departmental Requirements


Related Requirements


DAN 111, 112, 113

Electives

15

Total

192

Acting/Musical Theatre

General Education Requirements

Required option:

TH 214

Departmental Requirements


Related Requirements

DAN 104, 105, 106, 121, 122, 123, 207, 208, 209, 307, 308, 309, 331, 332, 333 plus six credits of 300 or 400 dance of choice

Electives

7

Total

192
Degree Requirements—

Urban Affairs and Geography

Professors Mazey, Oshiro
Associate Professors Dustin (chair), Pammer, Wenning
Assistant Professor Wetter (WSU-Lake Campus)
Instructor Lowrey

Urban Affairs

Urban Affairs is an interdisciplinary program offering a Bachelor of Arts or Bachelor of Science degree. The program provides students with an appreciation of the urban environment as a complex system and teaches them to approach urban processes from an interdisciplinary perspective. The program is designed to prepare students for junior- or entry-level positions in local government and nonprofit organizations, and provides a foundation for students preparing for graduate work.

Students must have at least a 2.3 GPA or receive a special waiver from the chair to be admitted to the major. Interested students may apply for admission after meeting college admission requirements and completing the General Education Area IV social science requirement (PLS 200, SOC 200, EC 200, PSY 105). Majors are required to complete a common core of courses and a specialization in one of four areas: community development, criminal justice, urban management and administration, or urban social and physical planning.

For further information about the program and admission criteria and procedures, students should contact the Department of Urban Affairs and Geography.

Degree Requirements—

Urban Affairs

Bachelor of Arts Degree

General Education Requirements  57
Departmental Requirements  49–50
TH 102, 147, 148, 149, 222 (four hours), TH 301, 304, 328, 329, 350, 351, 365, 375
Additional electives chosen from:
360, 361, 366, 367, MP 131
9–10
Additional electives in theatre
12
Language and Research Methods Requirement 24–32
Electives 53–62
Total 192

Bachelor of Science Degree

General Education Requirements  57
Departmental Requirements  67–71
URS 311, 411, 492
12
Foundation Courses: choose five
URS 317, 321, 345, 424, 425, 450, 470, 475,
GEO 340; SOC 444
20
(See specializations and advisor before enrolling in these or other approved foundation courses.)
Urban Affairs Specialization 32–35
(see specializations below)

ENG 330 or 333 3–4

Foreign Language and Research Methods Requirement 24–32

Electives 32–44

Total 192

Degree Requirements—Urban Affairs

Bachelor of Science Degree

General Education Requirements 54

Required Substitution: MTH 228

Departmental Requirements 67–71

URS 311, 411, 492

Foundation Courses: choose five 20

URS 317, 321, 345, 424, 425, 450, 470, 475,
GEO 340, SOC 444
(See specializations below and advisor before enrolling in these or other approved foundation courses.)

Urban Affairs Specialization 32–35

ENG 330 or 333 3–4

Science Requirements 22–26

MTH 128 or 129, and 228, plus two statistics and two computer science courses to be approved by the department

Electives 41–49

Total 192

Criminal Justice Concentration—32 Credit Hours

This concentration meets the needs of students preparing for careers in crime prevention and law enforcement. Knowledge of law, the urban environment, psychology, and social relations provides a foundation for work in the criminal justice system. Employment may be found in various judicial, administrative, and police agencies at all levels of government and in private companies. In addition to required courses, students select elective courses that fit their unique career objectives. Prior to enrollment, students should discuss with their advisor which courses best fit their needs.

Recommended foundation courses include:
URS 321, 345, 425, 450, and SOC 444.

Required concentration courses include:
URS 420 and PLS 436, plus 24 credit hours of department approved courses.

Community Development Concentration—32 Credit Hours

Community development involves revitalizing, sustaining, and expanding urban areas. Such work requires an understanding of many of the principles found in planning, organizing, managing, policy-making, finance, economics, and physical development. The community development course series prepares students for careers as community developers in public, private, not-for-profit, or grassroots organizations. Students should select courses that fit their unique career objectives, such as economic development, neighborhood development, and social development.

Prior to enrollment, students should discuss with their advisor which courses best fit their needs.

Recommended foundation courses include:

Required concentration courses include:
URS 415, 416 and 24 credit hours of department approved courses.

Urban Management Administration—32 Credit Hours

This area is suggested for students who wish to develop careers in management and administration in public agencies, including municipal, county, and state governments and not-for-profit organizations. It includes courses in management, personnel and labor relations, budgeting, and public administration. Prior to enrollment, students should discuss with their advisor which courses best fit their needs.

Recommended foundation courses include:
URS 321, 345, 425, 450 and 470 or 475.

Required concentration courses include:
URS 346, 446 and 24 credit hours of department approved courses.

Urban Physical and Social Planning—35 Credit Hours

Urban Physical Planning prepares students for involvement in functions and processes such as infrastructure design, zoning, land use, code enforcement, and pollution abatement. Urban Social Planning involves students in careers associated with health, recreation, welfare, and social wellness. Municipalities, counties, public authorities, not-for-profit organizations, and engineering and architectural firms employ physical and social planners.

Prior to enrollment, students should discuss with their advisor which courses best fit their needs.
Recommended foundation courses include:
URS 317, 321, 424, 450 and GEO 340.

Required concentration courses include:
URS 318, GEO 365, 447, 448 and 16 credit hours
in department approved courses.

Urban Affairs Honors Program
The Urban Affairs Honors Program provides
an opportunity for students to achieve their highest
possible level of intellectual attainment. Urban
affairs majors of superior academic ability are
invited to apply. A student may enter either upon
successful application or at the invitation of the
Urban Affairs Honors Committee. To be eligible,
the student must have a cumulative GPA of 3.5 or
better in all course work completed at Wright State
University. It is recommended that students apply
to enter the program during their junior year and
no later than the first quarter of their senior year.
Honors students are required to complete
all urban affairs degree requirements, maintain a
cumulative GPA of 3.5 in all course work, complete
URS 411 (senior seminar) with a grade of A, defend
orally the seminar paper to a committee composed of
the URS Honors Committee and the faculty advisor
for the seminar paper, and complete at least one
University Honors Seminar.

Minor in Urban Affairs
The minor in urban affairs will benefit
students who pursue careers that have connections
to urban administration, planning, criminal justice,
or community development and nonprofit
organizations. Students minoring in urban affairs
study and analyze cities and urban regions as
systems. They will gain an understanding of
complex social, political, and economic forces
shaping urban life. Interdisciplinary urban affairs
courses may be useful to majors in the social
sciences, economics, business, education, and
health care.
Acceptance into the minor in urban affairs
requires an overall 2.3 GPA. Students who do
not have a 2.3 GPA may petition the chair of the
department for a waiver from this requirement.
Students should complete the social science General
Education requirements prior to enrolling in minor
classes. Students must maintain a minimum GPA
of 2.0 in the minor.

Requirements

<table>
<thead>
<tr>
<th>Course Identification</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>16</td>
</tr>
<tr>
<td>URS 311, 317, 321*, 345*</td>
<td></td>
</tr>
<tr>
<td>Elective Courses</td>
<td>12</td>
</tr>
<tr>
<td>Select three courses: URS 412, 415, 423, 424, 425, 450, 470 or 475</td>
<td></td>
</tr>
</tbody>
</table>

* Political Science students who take URS 321 for
their major will substitute URS 450 and 470.

Geography
Geography is the study of the location
and interrelationships of human and physical
phenomena on the earth's surface. Because of its
emphasis on spatial organization and distribution
of these phenomena, geography has a broad
cross-disciplinary base. Topics of study such as
cartography, climatology, landform analysis, remote
sensing, settlement theory, spatial
interaction, and urban morphology indicate the
breadth of contemporary geography. The undergraduate major in geography includes the study of
cultural, economic, physical, and regional
graphy, 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 allows 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
leading to either a Bachelor of Arts degree or
Bachelor of Science degree.

The Bachelor of Arts degree in geography
focuses on examining the processes of formation and
the characteristics of the cultural landscape. Students
select an area of study from physical geography,
resource analysis land management, or economic
graphy.

The Bachelor of Science program in geography
emphasizes the technical skills and logic that are
becoming critical as more geography majors seek
employment in government and business. Courses in
physical, economic, and social geography, and in
cartography, photogrammetry, remote sensing, and
graphic information systems 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 a part of an earth science program, or
as part of an elementary teaching major. Students
majoring in geography may qualify for certification
at the secondary level by meeting the minimum
requirements in professional education courses for
certification by the state of Ohio. Students interested
in this option should consult the College of
Education and Human Services for information.

Because of sequential requirements and
prerequisites, students are strongly urged to consult
with an advisor before registering.
The department participates in the university's dual major program; for further details, students should see the department chair.

Geography majors may participate in the department's internship program. The internship is designed to complement geography students' class work and give them experience in the actual work environment. Students interested in the internship should contact the departmental coordinator of the program or their advisor.

Certificate Program

The Department of Geography provides a certificate program in cartography, photogrammetry, and remote sensing. Included is a group of five courses exposing participants to the latest developments in data collection and analysis techniques, aerial and space cameras and sensors, photographic materials and reproduction processes, and mapping procedures, including computer mapping. Upon completing these courses, each participant must present a portfolio of materials for faculty review and complete an oral review of his or her work with the faculty.

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

Degree Requirements—Geography

Bachelor of Arts Degree

General Education Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Core Requirements</td>
<td>26</td>
</tr>
<tr>
<td>GEO 201, 202, 203</td>
<td>9</td>
</tr>
<tr>
<td>GEO 365, 385</td>
<td>10</td>
</tr>
<tr>
<td>GEO 486 Foundations of Geography</td>
<td>3</td>
</tr>
<tr>
<td>One course in regional geography</td>
<td>4</td>
</tr>
<tr>
<td>Departmental Major Requirements</td>
<td>32-33</td>
</tr>
<tr>
<td>GEO 322, 361, 430</td>
<td>12</td>
</tr>
<tr>
<td>GEO 340, 353, 375</td>
<td>12</td>
</tr>
<tr>
<td>Additional appropriate geography courses</td>
<td></td>
</tr>
<tr>
<td>numbered 300 or above to suit particular interests or future plans of the student</td>
<td>8-9</td>
</tr>
<tr>
<td>Related Course Requirements</td>
<td>24</td>
</tr>
</tbody>
</table>

Approved courses numbered 200 and above (not to exceed four courses in one department) in biological sciences, computer science, economics, engineering, geological sciences, history, mathematics, philosophy, physics, and political science

Language and Research Methods Requirement 24-32

Electives 21-29

Should be selected in consultation with the departmental advisor to complement and support the student's area of interest

Total 192

Degree Requirements—Geography

Bachelor of Science Degree

General Education Requirements 57

Departmental Core Requirements 26

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 201, 202, 203</td>
<td>9</td>
</tr>
<tr>
<td>GEO 365, 385</td>
<td>10</td>
</tr>
<tr>
<td>GEO 486</td>
<td>3</td>
</tr>
<tr>
<td>One course in regional geography</td>
<td>4</td>
</tr>
</tbody>
</table>

Departmental Major Requirements 36-37

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 322, 331, 430, 432</td>
<td>12</td>
</tr>
</tbody>
</table>

Physical Component

Three of the following:

GEO 322, 331, 430, 432 12

Economic-Social Component

Three of the following:

GEO 302, 340, 353, 375, 455 12

Skills Component

Three of the following:

GEO 361, 362, 445, 446, 447, 463 12-13

Related Course Requirements 28-29

Mathematics and Statistics

STT 264, 265 13

MTH 228

Philosophy

Two of the following:

PHL 215, 471, 472 8

Computer Science

Two of the following:

CS 141, 142, 205, 300 7-8

Electives 43-44

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

Total 192
Geography Honors Program

The geography honors program allows superior students to work on a geographic problem of their own choosing. Applicants must be majors in geography, have senior standing with 36 hours of geography courses to their credit, and meet certain minimum GPAs. Candidates are required to complete an honors project under the direction of a geography faculty member. Successful completion of the project, including written and oral project reports, carries four academic credits and entitles students to graduate with 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.

Minor in Geography

The minor in geography is designed for students in other disciplines who wish to supplement their knowledge and skills with geographic analytical skills and perspectives. A minimum GPA of 2.5 is required in the minor.

The course requirements for a minor in geography are:

- GEO 331, 430 8
- GEO 340, 353 8
- GEO 361, 365 9
- GEO 385 5
- GEO 481/492 2

Women's Studies Programs

Program Director Anne Sisson Runyan

Women's studies programs at Wright State University give students opportunities to study a large and wide-ranging body of scholarship, both disciplinary and interdisciplinary, that support the position that gender lies at the heart of our personal identities, cultural and artistic expressions, social arrangements, political and economic systems, and even our ways of knowing and understanding the world. In the process of reclaiming and validating women's experiences and contributions to all fields of study and human endeavor, women's studies critically examines theories, assertions of fact, methodologies, and pedagogical approaches that have been developed under the conditions of the exclusion of women and other underrepresented groups as both generators of knowledge and subjects of inquiry. Thus, Women's Studies offers students new ways of seeing and new standards for evaluating diverse women's and men's contributions to knowledge and society, creating a more representative and transformative understanding of themselves and the world(s) in which they live.

Women's Studies is particularly concerned with how varying sex/gender systems are constructed and perpetuated over time and across cultures. It further evaluates how gender relations are related to other relations of inequality whether based on skin color, class, age, cultural identity, national origin, religion, physical ability, and/or sexual orientation.

Such inquiry is undertaken through and across most disciplines, particularly in the humanities and social sciences, but also in the sciences.

A background in women's studies is unique preparation for a variety of specialized occupations that relate to women's and diversity issues in such fields as law, policy making, social welfare, health, counseling, human resources, economic development, education, journalism, literature, art, and community or political organizing, whether in governmental or nongovernmental settings at local, national, or international levels. Such a background is also increasingly essential to all professional work that is likely to be done better by someone who is versed in and has thought hard about gender issues.

Women's Studies Option in the Selected Studies Major

For students who wish to design their own major to include an intensive and coherent study of women's studies, this option includes a women's studies internship and culminates in a senior project that arises from selected women's studies coursework. Prospective students must have their intended programs of study approved by the Selected Studies Committee and should consult with the director of the Women's Studies Program to formulate their plans.

Core Requirements

Two required Women's studies courses:
- Approaches to Women's Studies (WMS 200/PLS 225)
- Independent Field Experience (WMS 498)

Twenty credit hours of Women's Studies upper-division electives chosen from the following categories:
- feminist theory, history, literature, social sciences, and international/cross-cultural studies (Note: to be chosen from the list of courses approved for WMS available from the director of Women's Studies. WMS electives may have prerequisites other than WMS 200).
Twenty additional credit hours of upper-division electives (either Women's Studies or non-Women's Studies) that relate to an area of specialization within Women's Studies (e.g., women's history, women and literature, etc.) and contribute to the development of a focused senior project on a particular subject or theme in Women's Studies.

Senior Project 8-16
LA 490—proposal for a Women's Studies-oriented senior project that arises out of chosen course work must be submitted to the director of Women's Studies and approved by a project committee. See the selected studies program description for more information.

Minor in Women's Studies

The women's studies minor is open to students from all majors and consists of a total of seven to eight courses. All students take a single, required core course, cross-listed WMS 200/PLS 225.

In addition, students select six to seven courses from a list of approved women's studies courses available from the director of women's studies. Note: Some courses have prerequisites other than the recommended WMS 200. See course descriptions or instructors for additional prerequisites.

Requirements 28-32
Core Course
WMS 200/PLS 225 4
Approved Electives
6 to 7 courses 24-28
Total 28-32

Global Gender Studies Track in the International Studies Major

The global gender studies track in the international studies majors enables students to study women and gender issues from an international and cross-cultural perspective. Through courses on women and gender in relation to international diplomacy and peace studies, area studies, comparative cultures, and international economic affairs, students can develop special expertise for work in such areas as women in economic development, human rights, and cross-cultural relations in the contexts of intergovernmental and nongovernmental organizations. See the international studies program description as well as the directors of international studies and women's studies for more information.

Certificate Program in Women's Studies

An undergraduate certificate in women's studies can be completed by nondegree students who wish to gain a professional credential for working with women and on women's/gender issues in various occupations. To be admitted, students must either hold an undergraduate degree at the bachelor or associate level in any area with a 2.0 minimum GPA.

Requirements

Core Course
WMS 200/PLS 225 4
Approved women's studies electives
Four courses from at least two departments 16
Total 20

Other requirements:
1. At least three courses must be at the 300-level or above.
2. A minimum grade of “C” is required for each course counted toward the certificate.
3. Approved women's studies course taken by a student in an undergraduate degree program but not culminating in a completed minor can be applied toward the undergraduate certificate after the student graduates and is then admitted into the certificate program. At least two women’s studies courses must be taken as a nondegree student in these cases.
4. A portfolio or papers and projects produced for courses taken for the certificate must be submitted within three months of completing all course work to the director of women's studies for review by the women's studies committee. The certificate will be awarded following positive evaluation of the portfolio that will be judged on a pass/fail basis.

Other Options in Women's Studies

Students may alternatively or additionally pursue a women's studies graduate certificate independent of a graduate degree, alongside any graduate degree program or in the context of the women's studies emphasis in the master of humanities program or the women's studies option in the M.A. in English program. For more information on graduate work in women's studies, contact the women's studies director.
NURSING AND HEALTH
The nursing program, which leads to a Bachelor of Science in Nursing (B.S.N.) degree, is designed to meet students' individual needs. A program is also available for registered nurses who want to earn a B.S.N. degree. An honors program is available for students with superior academic ability.

The professional nurse is increasingly being viewed as the nucleus of the health care system, as well as serving as an advocate for health care consumers. Therefore, Wright State's program prepares self-directed graduates who can function as generalists in a number of settings and work in collaboration with other health professionals to coordinate and improve the health care of individuals, families, and communities.

The nursing program at Wright State is accredited by the National League for Nursing and approved by the Ohio Board of Nursing. Graduates of the program are eligible for the National Council of State Boards Licensing Examination (NCLEX) to become licensed as registered nurses.

Admissions and Advising

The baccalaureate program in nursing is an upper division major. Admission to Wright State University does not guarantee admission to the Wright State-Miami Valley College of Nursing and Health.

To be eligible to apply for admission to the college, students must be accepted as degree-seeking students at Wright State University, complete all designated prerequisite courses with a combined 2.5 GPA, and have at least a 2.5 cumulative GPA. Due to the number of applicants seeking admission to the College of Nursing and Health, admission will be competitive based upon cumulative GPA. The number of students admitted is determined by the availability of such resources as clinical sites and by the number of faculty available to the college.

All students must submit an admissions application to the college office by the established deadline.

Students must earn a grade of C or better in statistics and all science courses to progress through the clinical nursing courses. Students must also earn a grade of C or better in each nursing course.

All students must fulfill current health requirements, including immunizations, and certify they are in good health and able to actively participate in clinical experience and fulfill all program objectives. To confirm this, students must undergo a physical examination and submit documentation to the College of Nursing and Health before they enter NUR 209. Students must continue to document their meeting of health requirements each year thereafter. Faculty may request a student's reexamination if evident limitations interfere with the student's clinical practice or learning.

Prior to NUR 217, all students are required to purchase liability (malpractice) insurance in the amount specified by the College of Nursing and Health. A form is available in the college office. Students must also document that they have personal health insurance. In addition, students must submit proof of CPR certification, and it must be renewed as required.

Students must provide their own transportation to all clinical agencies.

New Students

All new students interested in nursing will be admitted to the university as prenursing students. Most new students will initially be advised in the University College. Students may seek admission to the College of Nursing and Health to complete their program after they:
1. complete 48 quarter credit hours;
2. maintain a cumulative GPA of 2.5 or higher;
3. complete all prerequisite courses with a minimum GPA of 2.5;
4. earn at least a grade of "C" in ENG 101 and 102, PSY 105 and 110, CHM 102, SOC 200, ANT 201, HST 101, and STT 160;
5. submit a College of Nursing and Health admissions application by the established deadline;
6. submit a written statement of 250 words or less describing life experiences the applicant brings to nursing.
Transfer Students

Transfer students must meet the same requirements as new students. Transfer students who do not have the necessary prerequisites will be admitted as prenursing students and advised in the University College until they meet the requirements listed for new students, including a GPA of 2.5 or above. Transfer students with 75 or more credits and at least a 2.5 GPA will be advised in the College of Nursing and Health.

Transfer students with baccalaureate nursing credits from another accredited nursing program will have their nursing credits evaluated in the College of Nursing and Health.

Registered Nurses

The College of Nursing and Health offers a Bachelor of Science in Nursing completion track for registered nurses. This course of study builds on the skills and experiences of the registered nurse and provides a solid preparation for future graduate study.

Registered nurses with associate degrees in nursing may complete all B.S.N. degree requirements in two calendar years of full-time study. Diploma graduates without university credits will need additional time to complete the program.

Degree Requirements

Bachelor of Science in Nursing Degree

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>59.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Substitutions</td>
<td></td>
</tr>
<tr>
<td>Natural Science:</td>
<td></td>
</tr>
<tr>
<td>CHM 102</td>
<td></td>
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<tr>
<td>ANT 201, 202</td>
<td></td>
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<tr>
<td>Behavioral Sciences:</td>
<td></td>
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<tr>
<td>PSY 105</td>
<td></td>
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<tr>
<td>Math:</td>
<td></td>
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<tr>
<td>STP 160</td>
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<tr>
<td>Support Courses</td>
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<tr>
<td>M&amp;I 220</td>
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<tr>
<td>P&amp;B 301, 302</td>
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</tr>
<tr>
<td>PSY 110, 311, and 341</td>
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<tr>
<td>BMB 250</td>
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<td>PHR 340</td>
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<tr>
<td>Nursing Requirements</td>
<td>88</td>
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<tr>
<td>Free Electives</td>
<td>12.5</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
</tr>
</tbody>
</table>

There is also a plan of study for students who choose to complete the program in three calendar years plus fall quarter. Students who change from one plan to the other will be admitted to the alternate plan on a space-available basis only.

The College of Nursing and Health faculty reserves the right to revise the nursing requirements or the sequence at any time as deemed necessary to prepare students for new and emerging roles in nursing. Course requirements or sequence scheduling may also be changed.

Students can repeat a science course one time only: a maximum of two science courses may be repeated. Students may repeat one nursing course. Students subsequently failing any nursing course will be dismissed from the program.

Honors Program

Students with superior 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. To be eligible, students must have a 3.2 or higher GPA for the 45 credit hours immediately preceding the winter quarter of their junior year. The applications are reviewed by the College of Nursing and Health Scholarly Development Committee. Final acceptance into the program is contingent on successful completion of NUR 308 or NUR 321. Application forms are available in the college office.

Student Organizations

The Wright State Student Nurse Association (WSSNA) is a branch of the national and state student nurse associations and is open to all nursing and prenursing majors.

Zeta Phi Chapter of Sigma Theta Tau International Honor Society of Nursing is affiliated with the College of Nursing and Health. Membership is offered to the top one-third of baccalaureate students who have completed at least three-fourths of the nursing curriculum.

Student Mentoring and Retention Team (SMART) is a student managed/faculty supported retention program for all prenursing and nursing students.
The College of Science and Mathematics offers programs leading to bachelor’s degrees in several disciplines. The Bachelor of Science degree is offered in biological sciences, chemistry, integrated environmental sciences, geological sciences, mathematics, medical technology, physics, and psychology. Bachelor of Arts programs are available in biological sciences, chemistry, geological sciences, mathematics, and psychology. The college also offers master’s and doctoral degrees in certain programs. Interdisciplinary baccalaureate programs are offered by some departments, such as environmental sciences, geological sciences, mathematics, and physics. Pre-professional programs for students planning to teach science or mathematics in grades 7–12 are available in biological sciences, integrated environmental sciences, geological sciences, mathematics and statistics, and physics.

Dual majors programs are available in some departments (e.g., chemistry-business); students should discuss any specific interest with the college advisor. Dual majors will receive a Bachelor of Science degree when both of the departments are in the College of Science and Mathematics, if approved by both departments. Students interested in certain professional programs ordinarly 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.

With prior approval by the appropriate departments, it may be possible for students to get credit for research done on individual projects at any of the national laboratories under the Science and Engineering Research Semester (SERS) funded by the U.S. Department of Energy and the Office of Energy Research. Participating departments are biological sciences, mathematics and statistics, and physics.

Admissions and Advising

Students must apply for admission to the College of Science and Mathematics. Applicants must meet the following requirements: completion of at least 24 credit hours with a minimum GPA of 2.0 overall; completion of at least two courses in the College of Science and Mathematics (or transfer equivalents) with minimum grades of C. Individual departments may specify requirements, such as specific courses or higher GPAs overall or in the major only.

After the office of the dean reviews each student’s application, the student will be assigned an advisor in the appropriate department who will help the student develop a program of study.

Degrees and Areas of Study

Requirements for the Bachelor of Science Degree

To be eligible for the Bachelor of Science degree, students must:

1. fulfill the university General Education requirements.
2. complete the residency requirement of 45 credit hours at Wright State. At least 15 of the last 45 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 GPA and at least a 2.0 GPA 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. In certain programs, a grade of “C” or better must be earned in specified courses.
4. complete at least 75 credit hours in advanced courses (numbered 200 and above) applicable to the degree.
5. complete at least 54 credit hours in one department, by permission of the department chair, up to 18 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 95 credit hours outside the major department.

Requirements for the Bachelor of Arts Degree

To be eligible for the Bachelor of Arts degree, students must complete the requirements listed for the Bachelor of Science and also must:

1. Complete at least 27 credit hours in departments outside the College of Science and Mathematics and the College of Engineering and Computer Science. 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 either the College of Science and Mathematics or the College of Engineering and Computer Science 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, geological sciences, mathematics and statistics, physics, and psychology. These honors programs give well-qualified students the opportunity to complete an independent research project and pursue advanced course work. Students interested in pursuing an honors project should consult with the chair of the appropriate department. Honors are awarded at graduation, upon completion of requirements.

Cooperative Education Program

A cooperative education program is available that gives students the opportunity to work full time or part time in a career-related experience. Completion of these pre-professional programs does not guarantee admission to the graduate level, master's degree teacher licensure program, housed in the College of Education and Human Services (CEHS).

The CEHS graduate program will lead to a master's degree (M.Ed.) and the Adolescence to Young Adult teaching license. The admissions criteria for this program are detailed in the Wright State University Graduate Catalog. Questions should be directed to the CEHS Office of Student Services.

Student Organizations

Through involvement in student clubs and societies in the College of Science and Mathematics, students can develop closer ties with other students in the same major. Clubs and societies available to students within the college are: for biological sciences majors; the Biology Club, Environmental Sciences Club; and Sigma Xi Honor Society; for chemistry majors: the Chemistry Club (student affiliate of the American Chemical Society); for geological sciences majors, student chapters of the American Association of Petroleum Geologists and the Society for Exploration Geophysicists, American Institute of Professional Geologists, and Sigma Gamma Epsilon Honor Society; for physics majors; the Physics Club and Sigma Pi Sigma Honor Society; for psychology majors, the Psychology Club and Psi Chi Honor Society; and for students interested in medical school, Phi Delta Epsilon.

Anatomy

Professor Fyffe

Associate Professors: Kuntzman (Emeritus), Nagy, Nieder, Pearson, Ream, Scott (Chair)

Assistant Professor: Alvarez

The Department of Anatomy provides limited course work for undergraduate students. Basic human anatomy is a two-quarter sequence covering the essentials of anatomy with emphasis on gross anatomy and histology, but also includes introductory neuroanatomy and embryology. The laboratory portion of the course incorporates the use of cadavers and computer programs. The course provides a strong academic background for those planning to enter the life sciences, nursing, medicine, or other health-related professions. Opportunities for undergraduates to participate in special projects focused on human structure are available.

The department also offers graduate courses in the areas of gross anatomy, microanatomy, embryology, and neuroscience for a Certificate in Anatomy (three quarters) and for master's degree candidates with course option (seven quarters) or with thesis option (two years). In addition, the department provides course work at the doctoral level in the Biomedical Sciences Ph.D. program.
Biochemistry and Molecular Biology

Professors Batra, Leffak, Organisciak (chair), Prochaska, Weisman
Associate Professors Alter, Berberich, Fritz (Emeritus), Paietta, Reo, Turchi
Assistant Professors Ho, Wilson

The Department of Biochemistry and Molecular Biology offers courses in metabolism, the molecular aspects of gene expression and cellular processes, and nutrition. Although the department does not have a formal baccalaureate degree program, these courses can serve as a concentration for those interested in building a background in biochemistry before pursuing a career in medicine or related biomedical sciences.

Honors Program

Under the biological sciences honors program, it is possible for students to do an undergraduate honors thesis with a faculty member from the Department of Biochemistry and Molecular Biology. Students interested in this area of study need background courses in biology, other life sciences, and chemistry.

Biological Sciences

Professors Arlian, Burton, Carmichael, Goldstein, Isaacs, Kantor (Emeritus), Runkle, Wheatly (chair), Wood
Associate Professors Amon, Barbour, Hull, Krane, Low, Mannack, Pohlman
Assistant Professors Baird, Gonzalez, Grasman, Hiskey (WSU-Lake Campus), Miller, Tomlin
Medical Technology Clinical Year Program Tamela Bash (Interim Director)

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 sciences, Bachelor of Science in Biology with an Exercise Science option, and Master of Science in biological sciences. A dual major program with chemistry is available.

There are minimum grade requirements for departmental courses in each of the undergraduate degree programs. See degree requirements for specific programs for details.

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 such as the Beavercreek Wetlands provide excellent opportunities for terrestrial and aquatic field studies.

Students must plan their individual programs of study with the help of a departmental advisor to be sure they are meeting university, college, and departmental requirements. Many undergraduate students include faculty-guided, independent-research projects in their academic programs.

Biological Sciences

The Bachelor of Science curriculum offers a broad, integrated, in-depth approach to the life sciences. The departmental requirements consist of a balanced core of courses selected from several subject areas, combined with elective courses from the Departments of Biological Sciences, Anatomy, Physiology and Biophysics, Biochemistry and Molecular Biology, and Microbiology and Immunology.

Within this degree, several different options are open to students. The programs of study can accommodate students with such differing interests and objectives as graduate work in molecular biology, laboratory work in microbiology, or field work in ecology. It can also serve as preprofessional preparation for medical, dental, or veterinary sciences. The biobusiness option offers a business minor.

Degree Requirements—Biological Sciences

Bachelor of Science Degree

Students must achieve a grade of C or better in each course used to fulfill the Departmental Requirements of the degree.

General Education Requirements 42

Required substitutions, which are also major program requirements:
BIO 112, 114, 115
MTH 228 or 229 and 230 or STT 264 and 265

Departmental Requirements 75

Area A (three courses)
BIO 112, 114, and 115 12

Area B (six courses)
BIO 210, 211, 212; 252; 253 or 254; 255 or 256 27

Area C
BIO 410, 492 6
Area D (life science electives) 30
A minimum of 30 credit hours must be selected from 300- and 400-level courses in the College of Science and Mathematics. At least 15 credits must be courses with a BIO prefix. Up to 15 credits may be selected from the Departments of Anatomy, Biochemistry and Molecular Biology, Microbiology and Immunology, and/or Physiology and Biophysics. Up to 10 credits may be selected from Chemistry, Geological Sciences, Mathematics and Statistics, Physics, and/or Psychology. With departmental permission, one additional course from Area D may be used in Area D. Up to eight credits of independent study courses (BIO 399, 488, 492, and 499) may apply. Departmental honors students may apply up to 12 hours of BIO 495.

Required Supporting Courses 65-70.5
CHM 121, 122, 123 15
CHM 211/215, 212/216, 213/217 18
PHY 111/101, 112/102, 113/103 or 240/200, 242/202, 244/204 15
MTH 229 or 228, and STT 264, 265, or MTH 229, 230, 231 13.5
Each student must also complete a laboratory course in analytical chemistry or a course in computer science (CS 205 recommended). 4-7.5
Electives 8.5-14

Total (minimum requirement) 196

Exercise Science
Exercise Science consists of three major areas of study, namely: exercise physiology, human motor behavior, and human biomechanics. This program is designed to promote and integrate scientific research, education, and practical applications of all aspects of exercise science to prepare the undergraduate in fields of physical performance, fitness, health/wellness, and research. Course work and practical experience is designed with the latest American College of Sports Medicine objectives for comprehensive knowledge in the field. Outcomes of study include the opportunity to take the American College of Sports Medicine (ACSM) and the National Strength and Conditioning Association (NSCA) certification exams.

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 electives allows students considerable flexibility to meet their individual educational objectives. Students must work with their advisor to formulate a specific plan of study.

Students must achieve a grade of C or better in each course used to fulfill the Departmental Requirements and the Departmental Electives of this degree.
General Education Requirements 42

Required substitutions, which are also major program requirements:
BIO 112, 114, 115
STT 264, 265

Departmental Requirements 45

Area A (three courses)
BIO 112, 114, 115 12

Area B (six courses)
BIO 210, 211, 212, 252; 253 or 254; 255 or 256 27

Area C
BIO 410, 492 6

Required Supporting Courses 47
CHM 121, 122, 123 15
CHM 211, 212, 213, 215 14
PHY 111/101, 112/102, 113/103 15
MTH 130, 145 or STT 264, 265 10

Electives 62

Must include the following:
1. Select 15 credits from 300- and 400-level courses in the Department of Biological Sciences (BIO prefix). You may apply up to five credits of independent study courses (BIO 399, 488, 492, 495, and 499).
2. Twenty-seven credit hours in academic courses outside the College of Science and Mathematics and the College of Engineering and Computer Science.
3. At least 23 of the elective credit hours in courses at the 200 level or above.
4. At least three courses in a department in the College of Science and Mathematics or the College of Engineering and Computer Science other than the major department.

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 a medical technology program accredited by the American Medical Association Council on Medical Education through the National Accrediting Agency of Clinical Laboratory Sciences (NAACLS). Upon successfully completing the program, students receive the Bachelor of Science in Medical Technology degree. They also become eligible to take the national certification examination given by the Board of Registry for Medical Technologists (ASCP) and the CLS examination administered by the National Certification Agency for Laboratory Personnel. Through special arrangements, students may obtain their clinical education in other programs of medical technology accredited by the NAACLS after they receive approval from the chair of the Department of Biological Sciences.

In the fall quarter of their preclinical year, students apply, through the department, for admission into the clinical laboratory program. Criteria used to determine admission include the academic record, letters of recommendation, and results of a personal interview. The number of positions in each class for the clinical year program is limited.

Degree Requirements—Medical Technology

Bachelor of Science in Medical Technology Degree

Students must achieve a grade of C or better in each course used to fulfill the Departmental Requirements and Clinical Program requirements of this degree.

General Education Requirements 42

Required substitutions, which are also major program requirements:
BIO 112, 278, 279
STT 264, 265

Departmental Requirements 40
BIO 112, 278, 279 13
BIO 252, 303 10
BIO 210, 211, 410, 476/477 17

Required Supporting Courses 64.5
CHM 121, 122, 123 15
CHM 211/215, 212/216, 213/217 18
CHM 312/314 7.5
MTH 129; STT 264, 265 11
M&I 426, 427, 428 9
CS 205 4

Clinical Program 65

MT 434 through 458

Total 211.5

In a program such as this, the order in which courses are taken is of extreme importance. The required program should be followed, and all individual course schedules should be planned with an advisor.

Medical Technology

Clinical Year Program

The College of Science and Mathematics offers a comprehensive Medical Technology Clinical Year Program that provides participating students with the academic preparation and clinical skills needed
to be a qualified practitioner. The curriculum begins in June and includes one quarter of basic lecture/laboratory courses on campus, followed by three quarters of supervised clinical rotations in nine cooperating affiliated clinical facilities: The Children’s Medical Center, Veterans Affairs Medical Center, Greene Memorial Hospital, Good Samaritan Hospital and Health Center, Mercy Hospitals in Hamilton and Fairfield, Miami Valley Hospital, McCullough-Hyde Memorial Hospital, and CompNet Clinical Laboratories. Upon successfully completing the program, students are eligible to receive the Bachelor of Science in Medical Technology degree, provided they meet the requirements for the degree stated in this catalog.

Prerequisites, Application, and Admission
Requirements for admission to the clinical year program are set by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Prerequisites include inorganic chemistry, organic chemistry and/or biochemistry, general biological sciences, microbiology, immunology, and mathematics. Applicants must also have a bachelor’s degree or be eligible for one upon completing the clinical program.

Eligible applicants from nonaffiliated universities will be considered. These applicants must also meet NAACLS requirements before they can enter the program.

Applicants with a foreign baccalaureate degree must meet NAACLS criteria before they enter the clinical year program.

Admission to Wright State University does not automatically guarantee admission into the clinical year program.

Applicants should submit their application materials and schedule an interview with the Medical Technology Program director during the fall quarter of the year before they enter the program.

Curriculum Outline

Course Requirements

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<tr>
<th>Course</th>
<th>Credit</th>
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<td>MT 436, 437</td>
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<td>MT 446, 447, 456</td>
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<td>BIO 499</td>
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<td>BIO 401</td>
<td>2</td>
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<td><strong>Total</strong></td>
<td><strong>65</strong></td>
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</table>

Environmental Sciences

The curriculum in environmental sciences provides students with a sound academic background and the specialized training needed for them to work effectively in several areas involving environmental quality management. Career opportunities include work in public health and environmental protection agencies, environmental consulting firms and analytical laboratories, and health and safety programs in industries. The program also prepares students for graduate programs in public health and environmental sciences. A field internship program, operated in cooperation with participating environmental health agencies or industries, gives students an opportunity to gain practical work experience. Students should consult with their advisor when planning their program to ensure that it meets their needs and interests.

Degree Requirements—Environmental Sciences

Bachelor of Science Degree

A grade of C or better must be achieved in each course used to fulfill the Environmental Sciences Core, Required Supporting Courses in biological sciences, Environmental Specialty courses, and Supporting Electives units of this degree.

General Education Requirements 42

Required substitutions, which are also major program requirements:

BIO 112, 278, 279
STT 264, 265

Science and Communication Core 99

BIO 112, 114, 115, 252, 278, 279, 415, 492
CHM 121, 122, 123, 211, 212, 213, 215, 216, 217
PHY 111/101, 112/102, 113/103
MTH 228, STT 264, 265
COM 101
ENG 333

Environmental Sciences Core 46–47

EH 292, 360, 362, 364, 368, 431, 461, 462, 466/467
Air Pollution (New course, no number as of printing date)
Solid and Hazardous Waste Management (New course, no number as of printing date)
EH 366 (field internship)
PLS 438
Environmental Specialty 15–18

Option A: Public Health and Environmental Protection 16
EH 463
BIO 464/475
BIO 476/477
STT 430

or

Option B: Industrial Hygiene and Environmental Protection 15
EH 468
BIO 413
CHM 302
MGT 200

Option C: Natural Resources Management 16–18
EH 453
BIO 306
BIO 407 or 411 or 473
GEO 447 or GL 461

Total 202–206

In a program such as this, the order in which courses are taken is of extreme importance. The required program should be followed, and all individual course schedules should be planned with an advisor.

Biological Sciences Education

Students who wish to teach Biology or Chemistry in Ohio public high schools must pursue the B.A. or B.S. degree in Biological Sciences. Upon completion of this undergraduate degree program in the College of Science and Mathematics, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State's College of Education and Human Services. Graduates of the B.A. or B.S. in Biological Sciences and the M.Ed. Professional Educators Program are then eligible to seek licensure from the Ohio Department of Education in Life Sciences or Life Sciences/Chemistry, depending on the content of the undergraduate curriculum.

Degree Requirements—Biological Sciences Education

Bachelor of Science Degree (Life Sciences/Chemistry)

The Adolescent to Young Adult Life Sciences/Licensure Program is based on an undergraduate Bachelor of Science degree in biological sciences.

General Education Requirements 42

Required substitutions: BIO 112, 114, 115
MTH 229, 230 or STT 264, 265

Departmental Requirements 75
BIO 112, 114, 115
BIO 210, 211, 212, 252, 253 or 254, 255 or 256
BIO 410, 492

Life Science Electives
Selected from 300- and 400-level courses.
At least 15 credits must have BIO prefix.
Must include CHM 312/314 and CHM 451.
Note: Students must earn grade of C or better for all courses in this category.

Related Supporting Courses 68.5
CHM 121, 122, 123
CHM 211/215, 212/216, 213/217
MTH 229, 230, 231
PHY 240/200, 242/202, 244/204
GL 251/252

Phase One Professional Education Courses 15
ED 221, 223, 301, 303, EDS 333

Total 200.5

Degree Requirements—Biological Sciences Education

Bachelor of Science Degree (Life Sciences)

The Adolescent to Young Adult Life Sciences/Licensure Program is based on an undergraduate Bachelor of Science degree in biological sciences.

General Education Requirements 42

Required substitutions: BIO 112, 114, 115
MTH 229 or 229, 230 or STT 264, 265

Departmental Requirements 75
BIO 112, 114, 115
BIO 210, 211, 212, 252, 253 or 254, 255 or 256
BIO 410, 492

Life Science Electives
Selected from 300- and 400-level courses.
At least 15 credits must have BIO prefix.
Up to 15 credits may be selected from the Departments of Anatomy, Biochemistry and Molecular Biology, Microbiology and Immunology, and/or Physiology and Biophysics.
Up to 10 credits may be selected from Chemistry, Geological Sciences, Mathematics and Statistics, Physics, and/or Psychology. With departmental permission, one additional course from Area B may be used in Area D. Up to eight credits of independent study courses (BIO 399, 488, 492, and 499) may apply. Departmental honors students may apply up to 12 credits of BIO 495.

Related Supporting Courses 83.5–90
CHM 121, 122, 123
CHM 211/215, 212/216, 213/217

Departmental Requirements 75
BIO 112, 114, 115
BIO 210, 211, 212, 252, 253 or 254, 255 or 256
BIO 410, 492

Life Science Electives
Selected from 300- and 400-level courses.
At least 15 credits must have BIO prefix.
Up to 15 credits may be selected from the Departments of Anatomy, Biochemistry and Molecular Biology, Microbiology and Immunology, and/or Physiology and Biophysics.
Up to 10 credits may be selected from Chemistry, Geological Sciences, Mathematics and Statistics, Physics, and/or Psychology. With departmental permission, one additional course from Area B may be used in Area D. Up to eight credits of independent study courses (BIO 399, 488, 492, and 499) may apply. Departmental honors students may apply up to 12 credits of BIO 495.

Related Supporting Courses 83.5–90
CHM 121, 122, 123
CHM 211/215, 212/216, 213/217
Degree Requirements—
Biological Sciences Education

Bachelor of Arts Degree (Life Sciences)
The Adolescent to Young Adult Life Sciences Licensure Program is based on an undergraduate Bachelor of Science degree in Biological Sciences.

General Education Requirements 42
Required substitutions:
BIO 112, 114, 115
STT 264, 265

Departmental Requirements 45
BIO 112, 114, 115 12
BIO 210, 211, 212, 252, 253 or 254, 255 or 256 27
BIO 410, 492 6

Required Supporting Courses 72.5
CHM 121, 122, 123 15
CHM 211/215, 212/216, 213/217 18
GL 251/252, 253/254, 255/256 13.5
MTH 130; STT 264, 265 or MTH 145 11
PHY 111/101, 112/102, 113/103 15

Electives 42
Must include the following:
1. Select 15 credits from 300- and 400-level courses in the Department of Biological Sciences (BIO prefix). You may apply up to five credits of independent study courses (BIO 399, 488, 492, 495, 499).
2. Twenty-seven credit hours in academic courses outside the College of Science and Mathematics and the College of Engineering and Computer Science (must include ED 211, 223, 301, 303, EDS 333).
3. At least 23 of the elective credit hours in courses at the 200 level or above.

Total 201.5

Biological Sciences Honors Program
An honors program allows qualified students to carry out independent projects under the guidance of faculty sponsors. Students who have maintained a cumulative GPA of 3.4 during the preceding three quarters may apply to the Department of Biological Sciences to pursue an honors program. Application for admission to the program should be made during the student's junior year. Students interested in the honors program should contact the departmental office.

Dual Major Program
The Department of Biological Sciences participates in the university's dual major program with the Department of Chemistry. Students should refer to the Department of Biological Sciences office for program requirements.

Chemistry

Professors Battino (Emeritus), Feld, Fortman, Gilpin (Dean), Goldfarb (Emeritus), Katovic, Servé (Chair), Seybold
Associate Professors Bombick, Dolson, Grossie, Hess (Emeritus), Ketcha, Turnbull
Assistant Professors Cook (Emeritus), Fossum, McGowin
Instructor Lunsford

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 their academic advisors. The Bachelor of Science program is certified by the American Chemical Society.
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.

In the Bachelor of Science program with an orientation for premedical students or others wishing a broader science base, CHM 319, 417, 420, 421, 425, and 445 are not required. The physics requirement may be met with the PHY 111, 112, 113 sequence and PHY 101, 102, 103 laboratories. BIO 112, 114, and 115 are required. At least two courses must be selected from BIO 210, 211, 212, 252, 256, 303, 305, 403. Courses in other sciences may substitute for these BIO courses with departmental permission. In addition, students must take at least nine credit hours selected from BMB 421, 423; CHM 402, 417, 420, 421, 440, 441, 443, 444, 461, 465/467. Students serious about medical school should elect BMB 421 and 423. Students should also be careful to fulfill all university and college degree requirements. Copies of a more stringent premedical program may be obtained from the chemistry department.

Because the order in which science courses are taken is so important, students are advised to begin the mathematics, chemistry, and physics sequences as soon as possible.

General Education Requirements 42

Required substitutions:
MTH 229, 230
CHM 121, 122, 123

Departmental Requirements 81
CHM 121, 122, 123 15
CHM 211/215, 212/216, 213/217 18
CHM 312/314; 417; 419; 451, 452, 453; 457, 458 28.5
CHM 420, 421; 425, 445*; 435/436 19.5
*other 400 level CHM courses may substitute for 445

Related Course Requirements 31
MTH 229, 230, 231 15
PHY 240/200, 242/202, 244/204 16
Electives 42

CHM 499 and EGR 153 are recommended along with at least one year of a foreign language.

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 outlines. Additional requirements include 12 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 Mathematics or the College of Engineering and Computer Science, 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 27 credit hours (18 of which must be 200 level or above) outside the Colleges of Science and Mathematics and Engineering and Computer Science. 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 students complete at least 30 hours in courses numbered 300 or higher applicable to the degree.

General Education Requirements 42

Required substitutions:
MTH 229, 230
CHM 121, 122, 123

Departmental Requirements 53.5
CHM 121, 122, 123 15
CHM 211/215, 212/216, 213/217 18
CHM 312/314; 451, 452/457, 453/458 20.5

Related Course Requirements 42–43
MTH 229, 230, 231 15
PHY 240/200, 242/202, 244/204; or 111/101, 112/102, 113/103 15–16
Science electives 12

Foreign Language Requirement 21

Additional Courses outside Science and Mathematics and Engineering and Computer Science 27

Electives 7–8

Total (minimum requirement) 193.5
Dual Major Degree Requirements—Chemistry

Dual Major Requirements in Chemistry

General Education Requirements 42

Required substitutions:
MTH 229, 230
CHM 121, 122, 123

Departmental Requirements 53.5
CHM 121, 122, 123 15
CHM 211/215, 212/216, 213/217 18
CHM 312/314; 451, 452/457, 453/458 20.5

Related Course Requirements 30–31
MTH 229, 230, 231 15
PHY 240/200, 242/202, 244/204; or 111/101, 112/102, 113/103 15–16

Second Component of Dual Major 67–68

Total (minimum requirement) 193.5

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.

Geological Sciences

Professors Gregor, Kulander (chair), Pushkar (Emeritus), Richard (Emeritus), Schmidt (Emeritus), Unrug (Emeritus), Wolfe

Associate Professors Carney, Cheng, Dominic, Kramer (Emeritus), Ritzi

Assistant Professors Agrawal, Hauser, Slattery, Strickland (WSU-Lake Campus)

The Department of Geological Sciences offers programs leading to the Bachelor of Science and Bachelor of Arts degrees in geological sciences. Both programs are designed to include geology and related sciences and to prepare students for graduate study or professional employment. Professional geologists are employed in protecting and enhancing existing resources (environment, surface and ground waters) as well as in exploring for new resources (oil, gas, minerals). The Bachelor of Science program is more highly structured and through the various options offered, is intended to prepare students for specific professional or technical objectives. 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 Arts program’s flexibility readily permits interdisciplinary programs such as the dual major, in which students may major in two quite different fields simultaneously. A minor is also available.

Since personal objectives, interests, and aptitudes vary considerably with each individual, the department tries to offer a broad spectrum of educational options within a framework of sound academic guidelines. Students majoring in geological sciences have considerable choice in the basic program, options, and elective courses. Students should be aware of these choices as early as possible, because course sequencing, particularly in Bachelor of Science options, is a critical factor. For this reason, all students are strongly urged to consult their advisor to develop an individual program.

Geological Sciences Honors Program

Candidates for the B.A. or B.S. degree in geological sciences who have a cumulative GPA 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 GPA of 3.0 or better and satisfactory completion of a senior thesis under the guidance of a faculty member. The senior thesis requires a total of between six and nine credits in GL 499. Students may choose the topic from any branch of geological sciences; current course listings in this catalog may be taken as a rough indication of the range available.

Applications to the honors program should be made in writing to the Undergraduate Studies Committee, Department of Geological Sciences, and should include the following:

1. A summary proposal (of about 200 words) for a senior thesis topic
2. Expected date of graduation (which must be at least three full quarters, not including summer quarter, after the date of the application)
3. The endorsement of the student’s departmental advisor, and that of the senior thesis advisor, if not the same

Electives and Requirements

Supporting electives are courses from the College of Engineering and Computer Science and the College of Science and Mathematics (excluding
psychology) that are not normal preparation or prerequisites for required courses and are not primarily designed for General Education. Up to eight credit hours of geological sciences courses may be used to satisfy this requirement. Any geological sciences course that is jointly listed with another department must be taken as a geological sciences course in order to qualify as a supporting elective. In addition to courses that satisfy the above criteria, up to eight credit hours from the courses listed below may be used as supporting electives: ATH 242, 300, 351; GEO 330, 331, 361, 362, 365, 432, 445, 446, 447, 463; PHY 107/117. Students should examine prerequisites before selecting any of these courses. Three quarters of GL 428 (Geology Colloquium) are required for all degree options. The department offers some courses that may be taken more than once (e.g., GL 399, Special Problems). These courses may have variable specific titles (e.g., GL 399, Paleontology and Stratigraphy of Ohio). A student may count multiple sections of such a course toward satisfying the geology elective/supporting elective requirement. However, a specific course may be applied toward this requirement only once.

Students who have taken the General Education geology sequence (100 level) are not required to take GL 251, 253, and 255. However, they are required to take GL 252, 254, and 256. Minor modifications in departmental programs will be made from time to time. It is the students’ responsibility to confer with their advisors periodically during the academic year, preferably once each quarter before registration.

Degree Requirements—
Geological Sciences/General Geology 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.

General Education Requirements 42

Required substitutions, which are also major program requirements:
MTH 229, 230
GL 251, 252, 253, 254, 255, 256
Departmental Requirements 77.5
GL 251/252, 253/254, 255/256 13.5
GL 381, 383, 385* 15
GL 485, 486, 487 13
GL 311, 428, (three quarters, 1.5 cr.), 434 15
Geological Sciences Electives 21

Related Course Requirements 70

CHM 121, 122, 123 15
CEG 220 or EGR 153 or CS 141 4
MTH 229, 230 10
PHY 240/200, 242/202, 244/204 16
STT 264 or 360 4
One course from MTH 231, STT 265 or STT 361 4–5
Supporting electives 15–16
Unrestricted Electives 13

Total 202.5

*It is generally recommended that students take GL 381 (fall), GL 383 (winter), and GL 385 (spring) the year following completion of the GL 251-255 sequence. GL 485 (fall), GL 486 (winter), and GL 487 (spring) should be taken the following year. Note that GL 485 is a prerequisite for GL 487.

Degree Requirements—
Geological Sciences/Environmental Geosciences Option

Bachelor of Science Degree

The environmental geosciences option prepares the graduate for a technical career investigating, remediating, or managing environmental resources, or for graduate study in these areas.

General Education Requirements 42

Required substitutions, which are also major program requirements:
MTH 229, 230
GL 251, 252, 253, 254, 255, 256

Departmental Requirements 84.5

GL 251, 252, 253, 254, 255, 256 13.5
GL 381, 383, 385, or
GL 401, 486, 487 13–15
GL 311, 422, 428 (three quarters, 1.5 cr.), 434, 450, 485 28.5
Choose 27.5–29.5 hours from non-chosen option above or from below:
GL 201, 304, 309, 405, 413, 421, 431, 444, 445, 461, 463, 470, 495, 499 27.5–29.5

Related Course Requirements 65

CHM 121, 122, 123 15
CHM 302 4
MTH 229, 230 10
PHY 240/200, 242/202, 244/204 16
STT 264, 265, or 360, 361 8
CEG 220, or CS 141, or EGR 153 4
Supporting Electives 8

Unrestricted Electives 6

Total 205.5
Bachelor of Arts Degree

The environmental geoscience option prepares the graduate for a technical career investigating, remediating, or managing environmental resources. Its broad and flexible approach allows students to combine scientific training with other fields such as business and management, public policy, or communication.

General Education Requirements 45

Required substitutions, which are also major program requirements:
GL 251/252, 253/254, 255/256

Departmental Requirements 61

GL 251/252, 253/254, 255/256 13.5
GL 201, 309, 311, 485, 428 (three quarters, 1.5 cr.) 434, 401 32
Choose 15.5 hours among: 405, 413, 421, 431, 444, 450, 455, 461, 463, 470, 486, 487, 495, 499 15.5

Related Course Requirements 47–50

BIO 112, 114, 115, or PHY 111, 112, 113, or CHM 121, 122, 123 12–15
Mathematics and statistics 10
Supporting electives 25

Electives outside the Colleges of Science and Mathematics and Engineering and Computer Science 27

Unrestricted Electives 10

Total 190–193

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 students to begin a career in this field or to pursue graduate study in geophysics.

General Education Requirements 42

Required substitutions, which are also major program requirements:
MTH 229, 230
GL 251/252, 253/254, 255/256

Departmental Requirements 90

GL 251, 252, 253, 254, 255, 256 13.5
GL 381, 383, 385 15
GL 311, 428 (three quarters, 1.5 cr.), 434, 485, 487 23.5
GL 422, 423, 424, 426 14
Geological sciences or physics electives 24

Related Course Requirements 64

CHM 121, 122, 123, or 191, 192, 193 15
PHY 240/200, 242/202, 244/204, 260 20
MTH 229, 230, 231, 232, 233 25
CEG 220 or EGR 153 4

Unrestricted Electives 11

Total 207

The recommended sequence is as follows:

Freshman Year
CHM 121, 122, 123; ENG 101, 102; GL 251, 252, 253, 254, 255, 256; MTH 229, 230, 231

Sophomore Year
GL 311, 485, 487, 434; PHY 260; CEG 220

Junior Year
GL 422, 423, 424, 426, 428; geological sciences electives; physics or mathematics electives; General Education courses

Senior Year
GL 422, 423, 424, 426, 428; geological sciences electives; physics or mathematics electives; General Education courses

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 its broad and flexible approach, students who elect to follow a Bachelor of Arts program should have specific educational objectives that can be reasonably attained through this program.

General Education Requirements 45

Required substitutions, which are also major program requirements:
GL 251, 252, 253, 254, 255, 256

Departmental Requirements 60

GL 251/252, 253/254, 255/256 13.5
GL 311, 485, 486, 428 (three quarters, 1.5 cr.), 434 24
Geological sciences electives 22.5
Geological Sciences Education

Students who wish to teach Earth Sciences in Ohio public high schools can pursue the B.A. degree in Geological Sciences. Upon completion of this undergraduate degree program in the College of Science and Mathematics, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State’s College of Education and Human Services. Graduates of the B.A. or B.S. in Geological Sciences and the M.Ed. Professional Educators Program are then eligible to seek licensure from the Ohio Department of Education in Earth and Space Sciences, Earth Sciences/Chemistry or Life Sciences/Earth Sciences, depending on the content of the undergraduate curriculum.

Degree Requirements—Geological Sciences Education

Bachelor of Arts Degree (Earth and Space Sciences)

The Adolescent to Young Adult Earth and Space Sciences Licensure Program is based on an undergraduate Bachelor of Arts degree in geological sciences.

General Education Requirements 42

Required substitutions:
GL 251/252, 253/254, 255/256
MTH 228

Departmental Requirements 60

GL 251/252, 253/254, 255/256 13.5
GL 311, 485, 486, 428 (three quarters, 1.5 cr.), 434 24
Geological Sciences Electives (must include GL 201 or 304, and GL 309, 401, and 499 (Oceanography, four cr.) 22.5

Related Course Requirements 83

BIO 112, 114, 115 12
CHM 121, 122, 123 15
PHY 107/117, 111/101, 112/102, 113/103 19
Mathematics and Statistics (Must include MTH 228 and STT 264) 10

Electives outside the Colleges of Science and Mathematics and Engineering and Computer Science (must include GEO 330 or 331, and ED 221, 223, 301, 303, EDS 333) 27

Unrestricted Electives 10

Total 195
Degree Requirements—Geological Sciences Education

Bachelor of Arts Degree (Life Sciences/Earth Sciences)

The Adolescent to Young Adult Life Sciences/Earth Sciences Licensure Program is based on an undergraduate Bachelor of Arts degree in geological sciences.

General Education Requirements

Required substitutions
GL 251/252, 253/254, 255/256
MTH 228

Departmental Requirements

GL 251/252, 253/254, 255/256
GL 311, 485, 486, 428 (three quarters, 1.5 crs), 434
Geological Sciences Electives (must include GL 201 or 304, and GL 309, 401, and 499)
(Oceanography, four cr.)

Related Course Requirements

BIO 112, 114, 115, 210, 211, 212, 252, 278, 279, 426, 492
CHM 121, 122, 123
Mathematics and Statistics
(Must include MTH 228 and STT 264)
PHY 107/117, 111/101

Electives outside the Colleges of Science and Mathematics and Engineering and Computer Science (must include GEO 330 or 331, and ED 221, 223, 301, 303, EDS 333)

Total

Minor Requirements—Geological Sciences

Departmental Requirements

GL 251/252, 253/254, 255/256, or
GL 105, 106, 107, 252, 254, 256
A minimum of 8.5 credit hours selected from:
GL 311, 381, 383, 385
GL 485, 486, 487, 434
0.5 credit hour of GL 428

Elective Courses

A minimum of 12 credit hours of geological sciences electives is required. In selecting these courses, the following applies:
1. No courses numbered below 200 are acceptable.
2. No more than four credit hours of courses numbered below 300 are acceptable.
3. No more than 1.0 credit hour of GL 428 (in addition to the 0.5 credit hour required) is acceptable.
4. No more than three credit hours of field-oriented courses (excluding GL 434) are acceptable.

Total

Integrated Science

Students who wish to teach Comprehensive Science in Ohio public high schools can pursue the B.S. degree in Integrated Science. Upon completion of this undergraduate degree program in the College of Science and Mathematics, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State’s College of Education and Human Services. Graduates of the B.S. in Integrated Science and the M.Ed. Professional Educators Program are then eligible to seek licensure from the Ohio Department of Education in Comprehensive Science.

Degree Requirements—Integrated Science Education

Bachelor of Science Degree

The Adolescent to Young Adult Comprehensive Science Licensure Program is based on an undergraduate Bachelor of Science degree in the College of Science and Mathematics.

General Education Requirements

Required substitutions:
BIO 112, 114, 115
MTH 229, 230

College Requirements

Elective

Total
GL 201, 251/252, 253/254, 255/256, 309, 486 or 342 or 399 (four cr.), 499 (Oceanography, four cr.)
PHY 107/117, 240/200, 242/202, 244/204, 260, 315, 316, 420

Required Supporting Courses

GEO 330 or 331
MTH 229, 230
STT 264

Phase One Professional Education Courses

ED 221, 223, 301, 303, EDS 333

Total 205

Mathematics and Statistics

Professors Arasu, Dombrowski (chair), Evans, Frickie, Khamis, Mann, Mazumdar, McKee, Miller, Park (Emeritus), Pedersen, Perkel, Ratnaparkhi, Rutter

Associate Professors Farrell, Haber (Emeritus), Ho, Hou, Kaplan, Loi, Lu, Mercer, Seoh, Svobodny, Turyn, Vance, Voss

Assistant Professors Cico (WSU-Lake Campus), Craighead, Huang, Hawley (WSU-Lake Campus), Kinateder, Mathews, Rife (WSU-Lake Campus), Tarpey, Wang

Instructors Brackenridge, Dahl, Diesslin, Douglas, Otto, Reineke

The Department of Mathematics and Statistics offers several programs leading to a bachelor’s degree in mathematics, as well as minor programs in mathematics and in statistics. Master of Science programs are available as well.

Major Programs

The Bachelor of Science program offers five concentrations: pure mathematics, applied mathematics, computing, statistics, and mathematics education. These five programs are adaptable to many postgraduation goals, ranging from various scientific or professional careers to graduate school. The Bachelor of Arts program provides a broad background in mathematics with a liberal arts orientation.

The Department of Mathematics and Statistics participates in the dual major program, leading to either the B.A. or the B.S. degree. For example, dual majors are available with computer science, engineering, and physics.

A cooperative education program is available that gives students the opportunity to work full time or part time in a career-related experience. Interested students should contact Career Services for more information.

Students must complete one of the major programs described below. 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. Students must achieve at least a 2.0 GPA in the courses numbered 300 or higher used to satisfy this component. The general electives may be taken outside the Department of Mathematics and Statistics.

Each mathematics major is assigned an advisor from the department faculty. As early as possible in their college career, students should consult with their advisor on the important choice of a concentration. Likewise, students should confer with their advisor to discuss which courses to take and when to take them. Advising materials are available in the department office to help mathematics majors in these choices. However, there is no substitute for regular, in-person consultation with the faculty advisor. Moreover, the advisor must approve all courses intended to satisfy program requirements.

Mathematics and Statistics

Degree Requirements—Mathematics/Pure Mathematics Concentration

Bachelor of Science Degree

General Education Requirements 42

Required substitutions:
MTH 229, 230
PHY 240/200, 242/202, 244/204

Departmental Requirements 73

Required Courses

Recommended Course
MTH 332

Elective Courses
STT 360, 361, 461, 462

Related Course Requirements 24

PHY 240/200, 242/202, 244/204
CS 141 and 142 or equivalent
Degree Requirements—Mathematics/Computing Concentration

Bachelor of Science Degree

General Education Requirements 42

Required substitutions:
MTH 229, 230
In Area Four, if physics is recommended for the natural sciences requirement. If physics is chosen, then PHY 240/200, 242/202, 244/204, is a required substitution.

Departmental Requirements 68

MTH 229, 230, 231, 232, 233, 255, 257, 280, 316, 317 or 381, 355, 492
STT 360, 361
MTH 431 or 451
Two courses selected from MTH 381, 407, 410, 419, 450, 456, 457, 458
One additional course selected from MTH 306, 381, 407, 410, 419, 431, 432, 451, 452, 456, 457, 458

Related Course Requirements 40–44

CS 240, 241, 242, 400
PHY 240/200, 242/202, 244/204 (if physics is selected for General Education Natural Science)
At least three from:
CEG 320, 433, 434; CS 405, 466, 470, 480;
MTH 476, 477

Electives 29–33

Total 183

Degree Requirements—Mathematics/Statistics Concentration

Bachelor of Science Degree

General Education Requirements 42

Required substitutions:
MTH 229, 230
In Area Four, if physics is recommended for the natural sciences requirement, then PHY 240/200, 242/202, 244/204 is a required substitution.

Departmental Requirements 72

Required Courses
MTH 229, 230, 231, 232, 255, 280, 355
STT 360, 361, 461, 462, 466, 467, 492

Elective Courses
STT courses numbered above 367
CS 470
Electives selected to complete the departmental requirements must include at least two 400-level courses in the department, at least one of which must be a statistics course.

Recommended Electives
STT courses numbered above 367
MTH 431, 432

Related Course Requirements 36–40

CS 141 and 142 or equivalent
PHY 240/200, 242/202, 244/204 (if physics is selected for General Education Natural Science)
At least 16 hours, chosen with the approval of a statistics faculty advisor, in any area in which statistical techniques can be applied.

Electives 30–34

Total 183
Degree Requirements—Mathematics

Bachelor of Arts Degree

General Education Requirements

Required Courses

MTH 229, 230

Elective Courses


Electives

26–27

Total

183

Honors Program

Mathematics majors who have demonstrated superior ability in upper-level mathematics and statistics courses may pursue an honors program with the approval of the department. Further information is available from the departmental office.

Dual Major

Special programs of study are available for students interested in a dual major in mathematics and either computer science, engineering, or physics. Requirements can be obtained in the Department of Mathematics and Statistics office.
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

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Substitutions:</td>
<td></td>
</tr>
<tr>
<td>MTH 229, 230</td>
<td></td>
</tr>
<tr>
<td>In Area Four, if physics is chosen for the natural sciences requirement, then PHY 240/200, 242/202, 244/204 is a required substitution.</td>
<td></td>
</tr>
</tbody>
</table>

#### Departmental Requirements

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>42</td>
</tr>
<tr>
<td>MTH 229, 230, 231, 232, 255, 355</td>
<td></td>
</tr>
<tr>
<td>At least two of the following:</td>
<td></td>
</tr>
<tr>
<td>MTH 431, 432, 451, 452, 457, 458, 480, 481, 482</td>
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</tr>
<tr>
<td>STT 461, 462</td>
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#### Elective Courses

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>STT 360 or 363, 361, 461, 462, 466, 467</td>
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</table>

### Related Course Requirements

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>STEM 141 and 142 or equivalent</td>
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</tr>
<tr>
<td>PHY 240/200, 242/202, 244/204</td>
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### Bachelor of Arts Degree

#### General Education Requirements

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<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
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<tr>
<td>Required Substitutions:</td>
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<tr>
<td>MTH 229, 230</td>
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#### Departmental Requirements

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<th>Subcategory</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Required Courses</td>
<td>45</td>
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<tr>
<td>MTH 229, 230, 231, 255, 355</td>
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<tr>
<td>At least two of the following:</td>
<td></td>
</tr>
<tr>
<td>MTH 431, 432, 451, 452, 457, 458</td>
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</tr>
<tr>
<td>STT 461, 462</td>
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</tr>
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#### Elective Courses

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STT 360 or 363, 361, 461, 462, 466, 467</td>
<td></td>
</tr>
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</table>

### Related Course Requirements

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 141 and 142 or equivalent</td>
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</tr>
</tbody>
</table>

### Minor Programs

Students majoring in another department may earn a minor in mathematics or a minor in statistics. Either minor can serve as an attractive credential for employment or improved preparation for graduate study. Each minor requires a minimum of 30 credit hours of approved courses; specific requirements follow.

#### Minor Requirements—Mathematics

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
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</table>

#### Required Courses

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MTH 229, 230, 231, and either MTH 253 or 255</td>
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</table>

#### Elective Courses

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STT 360 or 363, 361, 461, 462, 466, 467</td>
<td></td>
</tr>
</tbody>
</table>

#### Related Course Requirements

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM 141 and 142 or equivalent</td>
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</table>

#### Minor Requirements—Statistics

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Requirements</td>
<td>30</td>
</tr>
</tbody>
</table>

#### Required Courses

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 229, 230, and MTH 253 or 255</td>
<td></td>
</tr>
</tbody>
</table>

#### Elective Courses

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STT courses numbered above 367</td>
<td></td>
</tr>
</tbody>
</table>

Elective courses must be approved in advance by the Department of Mathematics and Statistics. A GPA of at least 2.0 must be attained in all minor courses, and a GPA of at least 2.0 must be earned in all minor courses at the 300 or 400 level.
Microbiology and Immunology

Professors Bigley, Giron, Rote (chair), Stills
Associate Professor Nelson
Assistant Professor Wooley

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 cover diagnostic microbiology, virology, and immunology, as well as the principles of immunology, microbiology, virology, and bacteriology. The program emphasizes the biology of host-parasite interactions and the structure-function relationship unique to microorganisms. A major in biological sciences with a concentration in microbiology and immunology prepares the student for graduate study in these areas or for further training as a diagnostic or research laboratory technologist.

Individual prerequisites are listed for each course, although students who enroll in courses at the 400 level should have completed the biological sciences sequence through BIO 212 (BIO 210, 211, 212), as well as CHM 211, 212, 213, and 312. BMB 421 and 423 or their equivalent are recommended as preparation.

Physics

Professors Bambakidis (chair), Hanson (Emeritus), Martin (Emeritus), Wolfe
Associate Professors Clark, Farlow, Hemsky (Emeritus), Listerman, Skinner, Wood (Emeritus)
Assistant Professors Basista, Foy

The Department of Physics offers programs leading either to a Bachelor of Science degree or a Bachelor of Arts degree in physics. The Department of Physics and the Department of Electrical Systems Engineering jointly offer a program leading to the Bachelor of Science in Engineering degree in engineering physics; see the Electrical Systems Engineering section of the College of Engineering and Computer Science chapter for more information on this program. Students in secondary education may earn the Bachelor of Arts degree in physics and enter the Professional Year Experience program of the College of Education and Human Services for licensure in physical sciences (physics and chemistry).

Minimum requirements for the Bachelor of Science and Bachelor of Arts degree in physics include successfully completing the required courses, with a GPA of at least 2.0 for all physics courses, as well as completing university and college degree requirements.

In addition to the required courses, the department requires, for the Bachelor of Science degree, that every physics major take PHY 494 or 499. The physics major who plans to pursue 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.

Degree Requirements—Physics

Bachelor of Science Degree

General Education Requirements 42

Areas One through Four (not counting substitutions listed below)
Required substitutions, which are also major program requirements:
MTH 229, 230
PHY 240/200, 242/202, 244/204

Departmental Requirements 67

PHY 240/200, 242/202, 244/204; or equivalent 16
PHY 260, 371, 372 10
PHY 315, 316, 322 10
PHY 420, 450, 451, 452, 460, 461, 462 25
PHY 494 6

Related Course Requirements 53

MTH 229, 230, 231, 232, 233, 253 28
MTH 332, 333 6
CHM 121, 122, 123, or 191, 192, 193 (or 361) 15
EGR 153 or equivalent 4
Electives 30

Total 192

Since the order in which courses are taken is important, students should closely follow the suggested programs for the required courses.

Bachelor of Arts Degree

General Education Requirements 42

Areas One through Four (not counting substitutions listed below)
Required substitutions, which are also major program requirements:
PHY 240/200, 242/202, 244/204
MTH 229, 230
Degree Requirements—
Physics/Geophysics 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 that 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 27

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 240, 241, 242</td>
<td>12</td>
</tr>
<tr>
<td>MTH 257</td>
<td>3</td>
</tr>
<tr>
<td>CS 400</td>
<td>4</td>
</tr>
<tr>
<td>CS 316, 317</td>
<td>8</td>
</tr>
</tbody>
</table>

Students who wish to learn about microprocessors may wish to take further courses in computer engineering, such as CEG 260, 320, and 360. For these 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 plan to pursue graduate study in biophysics or medical physics.

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 35

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 112, 114, 115</td>
<td>12</td>
</tr>
<tr>
<td>BIO 492 (biophysics emphasis)</td>
<td>2</td>
</tr>
<tr>
<td>CHM 211, 212</td>
<td>12</td>
</tr>
</tbody>
</table>

Electives chosen from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 202, 306, 307, 402/405; BMB 421, 422</td>
<td>9</td>
</tr>
</tbody>
</table>
Physics Education

Students who wish to teach Physical Sciences in Ohio public high schools can pursue the B.A. degree in Physics. Upon completion of this undergraduate degree program in the College of Science and Mathematics, students then need to complete the Professional Educators Program (PEP) Master of Education degree (M.Ed.) through Wright State's College of Education and Human Services. Graduates of the B.A. in Physics and the M.Ed. Professional Educators Program are then eligible to seek licensure from the Ohio Department of Education in Physical Sciences, Life Sciences/Physical Sciences, or Earth Sciences/Physical Sciences, depending on the content of the undergraduate curriculum.

Degree Requirements—
Physics Education

Bachelor of Arts Degree (Physical Sciences)

The Adolescence to Young Adult Physical Sciences Licensure Program is based on an undergraduate Bachelor of Arts degree in physics.

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required substitutions:</td>
<td></td>
</tr>
<tr>
<td>PHY 240/200, 242/202, 244/204</td>
<td></td>
</tr>
<tr>
<td>MTH 229, 230</td>
<td></td>
</tr>
<tr>
<td>Departmental Requirements</td>
<td>48-49</td>
</tr>
<tr>
<td>PHY 240/200, 242/202, 244/204</td>
<td></td>
</tr>
<tr>
<td>PHY 107/117, 315, 371, 446, 450</td>
<td>36</td>
</tr>
<tr>
<td>Physics Electives (15 cr. chosen from the following):</td>
<td>12-13</td>
</tr>
<tr>
<td>PHY 316, 322, 372, 420, 451</td>
<td></td>
</tr>
<tr>
<td>Related Course Requirements</td>
<td>117</td>
</tr>
<tr>
<td>BIO 112, 114</td>
<td>8</td>
</tr>
<tr>
<td>CHM 121, 122, 123</td>
<td>15</td>
</tr>
<tr>
<td>CHM 211/215, 212/216, 213/217, 312/314, 451</td>
<td>28.5</td>
</tr>
<tr>
<td>GL 251/252, 253/254, 255/256</td>
<td>13.5</td>
</tr>
<tr>
<td>MTH 229, 230, 231, 232, 233</td>
<td>25</td>
</tr>
<tr>
<td>Electives outside the Colleges of Science and Mathematics and Engineering and Computer Science (must include ED 221, 223, 301, 303, EDS 333)</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
</tr>
</tbody>
</table>

Degree Requirements—
Physics Education

Bachelor of Arts Degree (Life Sciences/Physics)

The Adolescence to Young Adult Life Sciences/Physics Licensure Program is based on an undergraduate Bachelor of Arts degree in physics.

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required substitutions:</td>
<td></td>
</tr>
<tr>
<td>PHY 240/200, 242/202, 244/204</td>
<td></td>
</tr>
<tr>
<td>MTH 229, 230</td>
<td></td>
</tr>
<tr>
<td>Departmental Requirements</td>
<td>48</td>
</tr>
<tr>
<td>PHY 240/200, 242/202, 244/204</td>
<td></td>
</tr>
<tr>
<td>PHY 107/117, 260, 315, 371, 446, 450</td>
<td>36</td>
</tr>
<tr>
<td>Physics Electives</td>
<td></td>
</tr>
<tr>
<td>Select from the following:</td>
<td></td>
</tr>
<tr>
<td>PHY 316, 322, 372, 420, 451</td>
<td>12-13</td>
</tr>
<tr>
<td>Related Course Requirements</td>
<td>114.5</td>
</tr>
<tr>
<td>BIO 112, 114, 115, 210, 211, 212, 252, 278, 279, 426, 492</td>
<td>43</td>
</tr>
<tr>
<td>CHM 121, 122, 123</td>
<td>15</td>
</tr>
<tr>
<td>GL 251/252</td>
<td>4.5</td>
</tr>
<tr>
<td>MTH 229, 230, 231, 232, 233</td>
<td>25</td>
</tr>
<tr>
<td>Electives outside the Colleges of Science and Mathematics and Engineering and Computer Science (must include ED 221, 223, 301, 303, EDS 333)</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>204.5-205.5</td>
</tr>
</tbody>
</table>

Degree Requirements—
Physics Education

Bachelor of Arts Degree (Earth Sciences/Physics)

The Adolescence to Young Adult Earth Sciences/Physics Licensure Program is based on an undergraduate Bachelor of Arts degree in physics.

<table>
<thead>
<tr>
<th>General Education Requirements</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required substitutions:</td>
<td></td>
</tr>
<tr>
<td>PHY 240/200, 242/202, 244/204</td>
<td></td>
</tr>
<tr>
<td>MTH 229, 230</td>
<td></td>
</tr>
<tr>
<td>Departmental Requirements</td>
<td>48</td>
</tr>
<tr>
<td>PHY 240/200, 242/202, 244/204</td>
<td></td>
</tr>
<tr>
<td>PHY 107/117, 260, 315, 371, 446, 450</td>
<td>36</td>
</tr>
<tr>
<td>Physics Electives</td>
<td></td>
</tr>
<tr>
<td>Select from the following:</td>
<td></td>
</tr>
<tr>
<td>PHY 316, 322, 372, 420, 451</td>
<td>12-13</td>
</tr>
</tbody>
</table>
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 121, 122, 123</td>
<td>15</td>
</tr>
<tr>
<td>GL 201 or 304, 251/252, 253/254, 255/256, 309, 311 or 420, 401, 485, 486 or 342 or 399 (four cr.), 499 (Oceanography)</td>
<td>43.5</td>
</tr>
<tr>
<td>MTH 229, 230, 231, 232, 233</td>
<td>25</td>
</tr>
</tbody>
</table>

Electives outside the Colleges of Science and Mathematics and Engineering and Computer Science (must include GEO 330 or 331, and ED 221, 223, 301, 303, EDS 333) | 27       |

Total | 204.5–205.5 |

**Physics Honors Program**

The Department of Physics has an Honors Program designed to provide superior students with a program that offers greater creativity and intellectual challenge. Students who wish to participate in this program must apply to the department during the spring quarter before they plan to enter the Honors Program. Interested students should have at least a 3.0 GPA overall and at least a 3.0 in physics courses numbered 300 and above. To graduate with honors in physics, students are required to complete PHY 480, 481, 482 and nine hours of honors research (499) with grades of B or better.

**Dual Major Program in Physics and Mathematics**

The dual major in physics and mathematics is designed for students majoring in physics who wish to gain a strong background in mathematics. This can be particularly valuable for those planning graduate study.

Since the physics major program for the Bachelor of Science degree requires 34 hours of mathematics, and the mathematics component of the major requires 45 hours, 11 additional hours of mathematics need to be taken. To earn a dual major, students must take the following mathematics courses:

1. MTH 229, 230, 231, 232, 233, 332, 333 | 31       |
2. MTH 255 and 355 (Matrix Algebra) must be taken in place of MTH 253. If MTH 253 has already been taken, the student must still take MTH 355. | 6       |
3. Eight hours of electives must be selected from restricted lists of courses. For a student in this program, the natural choice would be to select three courses from MTH 431, 432, 433, 480, 481, 482. | 8       |

Total | 45       |

In addition, students must take:

4. CS 141 and CS 142 or EGR 153 or equivalent (total eight hours);
5. complete the other nonmathematical requirements of the physics major.

**Minor Programs**

Students majoring in another department may earn a minor in physics. A minor can help prepare students for an interdisciplinary graduate program or serve as a supportive credential for employment. The minor requires a minimum of 35 credit hours as specified in the following:

**Minor Requirements—Physics**

Departmental Requirements | 35       |

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 240/200, 242/202, 244/204 (or PHY 111/101, 112/102, 113/103, 240, 242)</td>
<td>16</td>
</tr>
<tr>
<td>PHY 260, 315, 371</td>
<td>10</td>
</tr>
</tbody>
</table>

**Elective Courses**

(Nine hours chosen from the following courses as approved in advance by the Department of Physics)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 316, 322, 372, 400, 401, 420, 432, 450, 451, 452, 460, 461, 462, 494 (maximum three hours)</td>
<td>9</td>
</tr>
</tbody>
</table>

**Physiology/ Biophysics**

*Professors* Alvarez-Leefmans, Lauf (chair), Putnam

*Associate Professors* Corbett, Dean, Goldfinger, Lu, Nussbaum, White

*Assistant Professors* Gomez-Cambronero, Halm, Mechlin

The Department of Physiology and Biophysics provides a curriculum for students who plan to enter into medicine, nursing, or other health-related professions and participate in the Biomedical Sciences Ph.D. program. Although the department does not offer an undergraduate degree in physiology and biophysics, students may take physiology and biophysics as part of the Bachelor of Science degree in biological sciences or other science disciplines.
Psychology

Professors: Crampton (Emeritus), Flach, Hennessy, H. Klein, Kurdek, Nagy, Shebilske (Chair)

Associate Professors: Bennett, Campbell, Coile, Davis, Edwards, Gilley, Gill (WSU-Lake Campus), Kruger, Moss, Page, Rentsch, Tsang, Weber

Assistant Professors: Shalin, Steele-Johnson, Tett, Watamaniuk

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 students a broad introduction to contemporary psychology. The Bachelor of Arts curriculum offers the greatest flexibility in electives within and outside of psychology. The Bachelor of Science curriculum is recommended for students planning careers in academic, research, or professional fields. Both degree programs offer enough flexibility so that students can supplement their individual program with additional courses both inside and outside psychology. This allows students to tailor their degree to meet their individual goals. Students considering graduate school should obtain a copy of the booklet Preparation for Graduate Study from the Department of Psychology and consult with their departmental advisors.

Students must have earned 30 hours and have a cumulative GPA of 2.25 to transfer into the Department of Psychology. Once students have been accepted by the department, they are invited to attend a department orientation. Students receive critical information about degree completion, graduate school, job opportunities, etc., at this orientation. After attending orientation, students should work with their assigned advisor. Because of the breadth of psychology, a variety of different educational options are available. Students can select courses that best fit their area of interest. Advising materials for students interested in cognitive science, human factors, human services, or clinical psychology, and industrial/organizational psychology can be obtained from the department. The department offers a concentration in human factors. Students must earn at least 65 credit hours in Departmental Requirement courses for a Bachelor of Arts, and at least 73 credit hours for a Bachelor of Science degree.

Degree Requirements—Psychology/Academic Concentration

Degree requirements for all the psychology programs are subject to change. Check with the department office for the current degree requirements.

Bachelor of Arts Degree

General Education Requirements 54

Required substitutions, which are also major program requirements:

STT 264, 265

Departmental Requirements (minimum) 65

PSY 105, 110
PSY 300
Four of the following (at least one from each group):

PSY 311, 331, 341, 351
PSY 321, 361, 371, 391

Four 400-level electives in psychology (excluding 432, 489, 490, 498, 499) 16
Minimum electives in psychology 20

Related Course Requirements 38

STT 264, 265 8
One additional course in Science and Mathematics or Engineering and Computer Science outside psychology 3
Electives outside of Science and Mathematics and Engineering and Computer Science 27
Electives 26

Total (minimum requirements) 183

Degree Requirements—Psychology

Bachelor of Science Degree

General Education Requirements 54

Required substitutions, which are also major program requirements:

STT 264, 265

Departmental Requirements (minimum) 73

PSY 105, 110 8
PSY 300 and 400 9
Five of the following (at least two from each group):

PSY 311, 331, 341, 351
PSY 321, 361, 371, 391

Two courses from the following:

PSY 323, 333, 343, 353, 363, 373, 393
Four 400-level electives in psychology (excluding 432, 489, 490, 498, 499) 16
Minimum electives in psychology 12
Human Factors Psychology Concentration

Human factors is a field that was pioneered by psychologists, and the overwhelming majority of people in the field are psychologists. Graduates of the human factors concentration typically find employment in industry or government. They are also well prepared for graduate study in engineering psychology, experimental psychology, or human factors.

Degree Requirements—Human Factors Concentration/Experimental Psychology

General Education Requirements 54

Required substitutions, which are also major program requirements:

STT 264, 265
PHY 111/101, 112/102, and 113/103, or PHY 240/200, 242/202, 244/204

Departmental Requirements (minimum) 73

PSY 105, 110 8
PSY 300, 400 9
PSY 321, 331, 351, 371, and 391 20
PSY 323 and 373 8
PSY 401, 421, 465, and 471 16
PSY 306 4
PSY 404 4
PSY 432, 498, or 499 4

Related Course Requirements 42.5

PHY 111, 112, 113, or 240, 242, 244 13.5
STT 264, 265 8
MTH 229, 230 10
CS 141, 142 8
MTH 253 3

Electives 13.5

Total (minimum requirements) 183

Psychology Honors Program

Students interested in being admitted to the psychology honors program should apply before the beginning of their 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. All students must complete an honors thesis, for which academic credit is granted.

Minor Program

The psychology minor is available for students who would like to gain a better understanding of psychological processes. Students in a wide variety of majors may benefit by supplementing their knowledge and skill with a stronger background in psychology. The minor is flexible and allows students to select subsets of courses that are appropriate for particular majors. Students in biology, business, communication, computer science, education, nursing, and sociology may find that the psychology minor enhances their educational goals. The minor may be fulfilled by completing the following requirements.

Minor Requirements—Psychology

Departmental Requirements 36

Required courses:

PSY 105, 110 8

Three of the following courses:

PSY 311, 321, 331, 341, 351, 361, 371, 391 12

Elective Courses:

Electives in Psychology (200-400 level) 16

A GPA of at least 2.0 must be attained in all minor courses. Courses cross-listed with the student's major department cannot be included in the minor.
Teacher Education—Content Preparation

The following Science and Mathematics baccalaureate programs are offered as pre-professional programs in preparation for the graduate level Adolescence to Young Adult licensure programs:

- Earth and Space Sciences (p. 168)
- Earth Sciences/Chemistry (p. 168)
- Earth Sciences/Physics (p. 176)
- Integrated Mathematics (p. 172)
- Integrated Sciences (p. 169)
- Life Sciences (pp. 162–163)
- Life Sciences/Chemistry (p. 162)
- Life Sciences/Earth Sciences (p. 169)
- Life Sciences/Physics (p. 176)
- Physical Sciences (p. 176)
LAKE CAMPUS
The Lake Campus

The Wright State University–Lake Campus is located on the north shore of Grand Lake St. Marys between Celina and St. Marys. The Lake Campus is easily accessible to the residents of Auglaize, Mercer, Van Wert, Shelby, Allen, and Darke counties and offers associate and baccalaureate degree programs, with day and evening classes, and a limited number of upper division and graduate courses. The Lake Campus also offers a variety of preprofessional and certificate programs, and participates in the Ohio Transfer Module.

The Wright State University–Lake Campus was created in 1962 and became a regional branch campus of Wright State University in June 1969. In 1972, the college moved to its present location on 173 acres on the north shore of Grand Lake St. Marys between Celina and St. Marys.

The administrative wing of Dwyer Hall houses the Admissions/Registrar’s Office; Financial Aid/ Bursar’s Office; counseling, academic advising, testing, and career placement offices; and the offices of the dean and associate dean. A receptionist is available during business hours to answer questions, set up appointments with an academic advisor, and give students descriptive material.

Quarterly class schedules for classes held at the Lake Campus are available by contacting the Lake Campus, 1-800-237-1477 or (419) 586-0300.

Services

Specific services are available at the Lake Campus in the following areas.

Admission, Registration, and Fees

The staff at the Lake Campus can help students complete the application for admission. Lake Campus staff can also accept registrations for any Wright State University class and process the collection of student fees.

Financial Aid

Any individual interested in obtaining a college education should not fail to apply because of financial limitations. There are many forms of financial assistance available to deserving students whose personal and family financial resources are insufficient to meet their educational expenses. For complete information, be sure to contact the financial aid officer at the Lake Campus. Counselors are available to discuss your situation and the various possibilities for financial assistance.

Scholarships

The Lake Campus provides numerous scholarships for both high school seniors and continuing students. The scholarships are awarded on both academic and need-based criteria. Students apply by filling out a Lake Campus Scholarship application. Awards range from a $200 book scholarship to full tuition. Inquire at the Lake Campus Financial Aid Office.

Counseling and Testing

Professional counseling is provided free of charge to Lake Campus students. This service includes evaluation of personal interests, abilities, needs, and values; placement and aptitude testing; help in selecting careers; counseling for personal problems; and aid in developing desirable personal traits such as getting along with others, assertiveness, and self-discipline. Services are by appointment. Although counseling and testing are available to everyone, freshman students are especially urged to use these benefits so they can begin planning early for their career development.

Academic Advising

Academic advising is provided to all Lake Campus students. Through this service, students can get advice in planning the schedule of courses they will take during their college career. Students must consider General Education requirements, classes in specialized fields, courses that must be taken in sequence, and electives. The academic advisor recommends that students plan their quarterly schedules according to their chosen career objective so they will have the necessary credit hours in the appropriate classes to obtain their degrees. Incoming freshmen students must meet with an academic advisor.

Tutoring

Lake Campus makes every effort to help students who experience academic difficulty. In addition to counseling to improve study skills, tutoring in English, reading, mathematics, and most other subject areas is provided.
Learning Resource Center

The Learning Resource Center maintains computer software packages and audiovisual materials that allow students to improve basic skills and give advanced students a means to progress more rapidly in certain subjects or skills. The center also provides services such as tutoring and independent or individualized study in conjunction with another department or through the Learning Resource Center itself. These services are available to any Lake Campus student. Such services may include test proctoring, counseling, tutoring, and note taking. Students with disabilities are encouraged to contact the Learning Resource Center for supplemental services.

Job Placement

The Lake Campus offers a job placement service to help graduates locate suitable employment. Employers frequently contact the Lake Campus for their hiring needs.

Library

A vital part of the Lake Campus is the library. In addition to its own collections, the Lake Campus Library has access through OhioLINK to any book, audiovisual item, or journal available at the Dayton campus of Wright State University or other universities state-wide.

Veterans' Services

The staff in the Office of the Registrar at the Lake Campus will help qualifying individuals prepare the necessary forms, and will follow through with the regional Veterans Administration office to ensure that students receive their VA benefits.

Bookstore

The Cottage Bookstore is operated by Wright State for the convenience of Lake Campus students, providing textbooks, academic supplies, WSU apparel, and gifts.

Child Care

A child care partnership has been formed with the Auglaize/Mercer YMCA, providing convenient, on-campus child care services to students who are enrolled in one or more classes at the Lake Campus.

Student Organizations and Activities

The student body plays an active role in organizing activities and participating in campus government. Any Lake Campus student is eligible to take an active part in the planning of campus activities and serving as a representative to Lake Campus Faculty Government. The following are some of the organizations and activities that the student body helps support:

The College Community Arts Council is supported by the Lake Campus, local corporate gifts, grants from the state of Ohio, and ticket sales. Performances include not only drama and music of all types, but also ballet and residencies specifically for area public schools. Lake Campus students can attend all Arts Council functions at no cost.

Athletic Programs include the return of men's and women's basketball, beginning fall 1999.

Society of Manufacturing Engineers (SME) is an international professional society that provides many services such as programs, publications, workshops, conferences, and expositions. Activities and events are planned each year by the SME Student Chapter at the Lake Campus. These events and activities are free to SME members. Scholarships are provided annually to SME members by the chapter.

The Business Professionals of America is the national organization for students preparing for work in the business world. Business Professionals of America is for students at Wright State University–Lake Campus enrolled in business office education programs who are interested in developing personal, leadership, and office skills. Lake Campus students have won numerous awards at national BPA competitions.

Students Interested in Giving Help through Teaching (S.I.G.H.T.) was organized to provide services and support to all students interested in a career in education. Regular meetings provide students with opportunities for a variety of pre-professional activities, including portfolio assistance, practice interviews, and other programs. The group also publishes a quarterly newsletter.
Academic Programs

The academic programs at the Lake Campus consist of Associate of Arts and Associate of Science degrees and Associate of Applied Business, Associate of Applied Science, and Associate of Technical Study degrees. Programs leading to the Associate of Arts or the Associate of Science degrees serve as prebaccalaureate programs to many of the degree programs offered at the Dayton campus. Students can complete up to two years of coursework before moving on to the Dayton campus for completion of a bachelor's degree or transferring to another four-year institution.

Brief descriptions of programs in both the academic and technical areas follow.

Associate of Arts (A.A.) and Associate of Science (A.S.) Degrees

Biological Sciences

The offerings for an associate degree in biological sciences are designed to provide students with a generalized background which may lead into almost any field of biology including botany, zoology, aquatics, oceanography, forestry, agriculture, and medical arts.

Requirements for the Associate of Science Degree

Freshman Year

First Quarter 18
BIO 112 4 CHM 121 5
ENG 101 4 MTH Sequence* 5

Second Quarter 17–18
BIO 114 4 CHM 122 5
ENG 102 4 MTH Sequence* 4–5

Third Quarter 16–17
BIO 115 4 CHM 123 5
MTH 145 3 MTH Sequence* 4–5

Sophomore Year

Fourth Quarter 17
BIO 252 5 Fine Arts 3
PLS 200 3 Elective 3
HST 101 3

Fifth Quarter 18
BIO 256 5 Great Books 3
SOC 200 3 PSY 105 4
HST 102 3

Sixth Quarter 17
BIO 253, 254, or 255 5 EC 200 3
Comp. Studies 3 Regional Studies 3
HST 103 3

Total Hours Required for Degree 103–105

*Choose sequence: MTH 228 or 229 and STT 264, 265, or MTH 229, 230, 231

Business and Administration

The Associate of Science degree in business and administration is designed to prepare students to pursue a bachelor's degree in business with majors in accountancy, business economics, finance, management, and marketing. A knowledge of basic business functions and an awareness of the businessperson's responsibilities in the political, social, and economic order of society are fundamental objectives of the program.

Requirements for the Associate of Science in Business Degree

Freshman Year

First Quarter 17–19
ENG 101 4 HST 101 3
MTH 128 or 129 5 EC 201 3
Science I 4

Second Quarter 19
ENG 102 4 HST 102 3
MTH 228 5 EC 202 3
Science II 4

Third Quarter 17
HST 103 3 Fine Arts 3
EC 203 3 Science III 4
CS 205 4

Sophomore Year

Fourth Quarter 16
ACC 201 3 TMK 201* 3
TMG 201* 3 PSY 105 4
MS 201 3

Fifth Quarter 19
ACC 202 3 ENG 330 4
MS 202 3 SOC 200 3
Regional Studies 3 Nonbusiness Elective 3
Sixth Quarter  
ACC 203  3  TAD 232*  3  
MS 203  3  Great Books  3  
PLS 200  3  Comp. Studies  3  

Total Hours Required for Degree  107–109

*These courses are applicable to the baccalaureate program with special conditions. TMG 201 is accepted for MGT 302 after the student earns a "C" or better in MGT 490. Managing Technology and the Environment, which is required by all business majors. TMK 201 is accepted for MGT 301 after the student earns a "C" or better in MGT 491. Public Policy in the Business Environment.

**Chemistry**

An associate degree in chemistry prepares students for work as entry-level technicians, or for articulation or transfer to a baccalaureate degree program. The student who earns this degree may have an interest in many different jobs. Entry-level jobs in chemical research, medical laboratories, pharmaceuticals, petroleum industry, plastics, and chemical manufacturing are all possibilities.

Requirements for the Associate of Science Degree

**Freshman Year**

First Quarter  
CHM 121  5  MTH 229  5  
ENG 101  4  HST 101  3  

Second Quarter  
CHM 122  5  MTH 230  5  
ENG 102  4  HST 102  3  

Third Quarter  
CHM 123  5  Great Books  3  
MTH 231  5  HST 103  3  

**Sophomore Year**

Fourth Quarter  
CHM 211  4  SOC 200  3  
CHM 215  2  Comp. Studies  3  
Fine Arts  3  

Fifth Quarter  
CHM 212  4  Regional Studies  3  
CHM 216  2  ENG 333  4  
PSY 105  4  

Sixth Quarter  
CHM 213  4  PLS 200  3  
CHM 217  2  COM Elective  3  
EC 200  3  

Total Hours Required for Degree  97

**Geography**

The Associate of Arts curriculum in geography prepares students to pursue a baccalaureate degree in special areas of study such as physical geography, resource management, urban-economic geography, and urban planning. Students are encouraged to develop an understanding and awareness of the spatial organization and distribution of phenomena in the physical and human world.

Requirements for the Associate of Arts Degree

**Freshman Year**

First Quarter  
ENG 101  4  GL 105  3  
HST 101  3  GL 115  1  
EC 200  3  

Second Quarter  
ENG 102  4  GL 106  3  
HST 102  3  GL 116  1  
Elective  3  

Third Quarter  
HST 103  3  GL 107  3  
MTH 145  3  GL 117  1  
PSY 105  4  Elective  3  

**Sophomore Year**

Fourth Quarter  
GEO 201  3  Great Books  3  
SOC 200  3  Regional Studies  3  
CS 205  4  

Fifth Quarter  
GEO 202  3  Fine Arts  3  
PLS 200  3  Electives  6  

Sixth Quarter  
GEO 203  3  Electives  9  
Comp. Studies  3  

Total Hours Required for Degree  94

**History**

The Associate of Arts degree prepares students to pursue a baccalaureate degree in history. Through exposure to a broad spectrum of human experience in the past and present, students come to understand their relationship to other human beings and the structure of society. The history major is useful to students who wish to seek a career in such fields as teaching, journalism, archival work, government, politics, and law.
Requirements for the Associate of Arts Degree

Freshman Year

First Quarter
- ENG 101 4
- HST 101 3
- MTH 145 3
  science 1

Second Quarter
- ENG 102 4
- HST 102 3
  CS 205 4

Third Quarter
- HST 103 3
- PSY 105 4
- Elective 3

Sophomore Year

Fourth Quarter
- SOC 200 3
- Electives 6

Fifth Quarter
- HST 211 3
- PLS 200 3
- Elective 3

Sixth Quarter
- HST 212 3
- Electives 9

Total Hours Required for Degree 94

Management Information System

An associate degree in MIS prepares a student for continued work on a bachelor's degree. Career opportunities include entry-level positions as business systems analysts, programmer analysts, applications programmer, or as support personnel in an information center.

Requirements for the Associate of Science Degree

Freshman Year

First Quarter
- ENG 101 4
- MTH 129 3
  or MTH 128 5

Second Quarter
- ENG 102 4
- MTH 228 5

Third Quarter
- HST 102 3

Fourth Quarter
- HST 103 3
- EC 200 3
- PSY 311 4

Total Hours Required for Degree 94

Psychology

Students may choose to follow an Associate of Arts degree program in psychology to prepare themselves for further baccalaureate study. It is designed to provide a broad introduction to contemporary psychology. The Associate of Science degree is recommended for students planning careers in academics, research, or professional fields.

Requirements for the Associate of Arts Degree

Freshman Year

First Quarter
- ENG 101 4
- HST 101 3
- MTH 145 3

Second Quarter
- ENG 102 4
- HST 102 3

Third Quarter
- HST 103 3
- EC 200 3
- PSY 311 4

Fourth Quarter
- SOC 200 3
- Great Books 3
- Electives 6
Social Work

A career in social work requires that the individual possess self-discipline, emotional stability, and intellectual creativity. Students should be interested in people of widely varying ages, abilities, and backgrounds. The program is designed to prepare students for further baccalaureate study in social work. Career opportunities for the college graduate with a major in social work are found in governmental, private, and voluntary agencies. Typical agencies would include family services, children services, public schools, hospitals, mental health centers, and probation/parole boards.

Requirements for the Associate of Arts Degree

Freshman Year

First Quarter 15
ENG 101 4 PSY 105 4
HST 101 3 Science I 4

Second Quarter 15
ENG 102 4 PSY 110 4
HST 102 3 Science II 4

Third Quarter 16
HST 103 3 Elective 3
MTH 145 3 Science III 4
COM 102 3

Sophomore Year

Fourth Quarter 16
SOC 200 3 Great Books 3
SW 270 4 Regional Studies 3
EC 200 3

Fifth Quarter 17
PLS 200 3 Fine Arts 3
CS 205 4 SOC 221 3
PSY 200 4

Sixth Quarter 15
CST 240 3 SW 271 4
PSY 341 4 SOC 332 4

Total Hours Required for Degree 94

Sociology

A major in sociology increases students' understanding of the organization and functioning of human social groups and of the methods and techniques for analyzing these social units. The study of sociology prepares students for careers in law, hospital administration, corrections, and government/community services. The Associate of Arts degree prepares students for further baccalaureate work.

Requirements for the Associate of Arts Degree

Freshman Year

First Quarter 15
ENG 101 4 PSY 105 4
HST 101 3 Science I 4

Second Quarter 15
ENG 102 4 PSY 110 4
HST 102 3 Science II 4

Third Quarter 16
HST 103 3 Science III 4
SOC 200 3 Elective 3
COM 102 3

Sophomore Year

Fourth Quarter 16
Great Books 3 Regional Studies 3
EC 200 3 MTH 145 3
Elective 3

Fifth Quarter 14
PLS 200 3 Fine Arts 3
CS 205 4 PSY 200 4

Sixth Quarter 17
SOC 221 3 PSY 341 4
SOC 332 4 CST 240 3
Elective 3

Total Hours Required for Degree 92
Technical Associate Degree Programs:

Associate of Applied Business (A.A.B.)

Associate of Applied Science (A.A.S.)

Associate of Technical Studies (A.T.S.)

Associate degrees in the following technical programs prepare students for career entry after two years of study. Technical education programs provide the type of career training desired by business, industry, governmental units, and many other employers.

Financial Management Technology

The associate degree in financial management technology prepares students for career entry after two years of study. Technical education programs provide the type of career training desired by business, governmental units, and many other employers. Graduates of the program may obtain the following positions: bookkeeper, accounting assistant, and accounting technician of computerized accounting systems, or one of the following in management: management trainee, assistant manager, production supervisor, foreman, small business manager.

Requirements for the Associate of Applied Business Degree

Freshman Year

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Sophomore Year

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<td>TMG 270</td>
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| Total Hours Required for Degree | 94 |

Mechanical Engineering Technology Computer-Aided Drafting Design Option

Computer-Aided Drafting majors prepare detailed drawings based on rough sketches, specifications, and calculations made by engineers and designers. They also calculate the strength, quality, quantity, and cost of materials. Final drawings contain a detailed view of the object as well as specifications for materials used, procedures followed, and other information to implement the job. They are also capable of working with computer-assisted drawing and preparing graphic display materials. WSU-LC CAD graduates will be able to choose from a wide range of jobs. Many graduates become draftspersons, CAD operators, design technicians, quality control technicians, or technical illustrators.

Requirements for the Associate of Applied Science Degree

Freshman Year

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<td>PHY 111</td>
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### Manufacturing Option

The manufacturing technology curriculum provides a comprehensive exposure to the production of engineering drawings and the various aspects of engineering designs. A solid foundation of engineering mathematics and science, combined with hands-on computer lab experience, provide students the necessary skills to handle state-of-the-art equipment and procedures. CNC programming and machining experience, as well as experience with software like AutoCAD, allows students to graduate thoroughly familiar with the entire manufacturing design and production process. Basic and advanced blueprints are used throughout the curriculum in order to learn ANSI and ISO standards.

#### Requirements for the Associate of Applied Science Degree

### Freshman Year

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| General Education Elective | 3 |

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| COM Elective  | 3  |

### Total Hours Required for Degree

103

### Office Information Systems

#### Administrative Assistant Option

The administrative assistant in today's business world is a professional person who must make decisions and project and advance the public image of the executive for whom he or she works through communication skills and writing expertise. People in these positions must be proficient in all areas of office procedure and be skilled in operating office equipment in addition to assisting the executive. The office information systems program encompasses all of these necessary skills while giving the student a well-rounded background.

#### Requirements for the Associate of Applied Business Degree

### Freshman Year

<table>
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| General Education Elective | 3 |

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| Elective      | 3  |

### Total Hours Required for Degree

105
Sophomore Year

Fourth Quarter 16
OA 221 3 TOA 104 1
TOA 224 3 TOA 241 3
COM 203 3 EC 200 3

Fifth Quarter 16
TOA 105 1 OA 222 3
TOA 225 3 TOA 242 3
TOA 233 3 General Education Elective 3

Sixth Quarter 16
TOA 106 1 TOA 243 3
TOA 226 3 TOA 243 3
TOA 231 3 TAD 232 3

Total Hours Required for Degree 97

Legal Administrative Assistant Option

Preparing legal documents for court action or any correspondence involving legal acts, rights, offenses, and ethics requires a precise understanding of form and terminology. Accuracy is vital for the legal administrative assistant. The legal administrative assistant program combines training and practice on office machines and in office procedures, while teaching the nomenclature of law. Included is a basic introduction to accounting, business administration, and economics. Electives permit students to broaden knowledge in areas of career specialty or personal interest.

Requirements for the Associate of Applied Business Degree

Freshman Year

First Quarter 17
TOA 230 3 TOA 101 1
OA 211 3 TOA 235 3
ENG 101 4 TOA 251 3

Second Quarter 18
CS 205 4 TOA 102 1
OA 212 3 COM 203 3
ENG 102 4 TOA 297 3

Third Quarter 17
OA 220 3 TOA 115 3
TOA 103 1 PSY 105 4
TOA 297 3 TOA 297 3

Sophomore Year

Fourth Quarter 16
OA 221 3 TOA 104 1
TOA 224 3 TOA 241 3
COM 203 3 EC 200 3

Fifth Quarter 16
TOA 105 1 TOA 222 3
TOA 225 3 TOA 242 3
TOA 233 3 TOA 253 3

Total Hours Required for Degree 97

Medical Administrative Assistant Option

In addition to furnishing classroom techniques for perfecting basic office skills such as typing, shorthand, composition, and the use of office machines, the medical administrative assistant technology program incorporates fundamental courses in administration, accounting, economics, and data processing, while giving students exacting instruction in medical terminology, medical office procedure, biology, and psychology. Students completing this program are prepared to fill medical administrative assistant positions.

Requirements for the Associate of Applied Business Degree

Freshman Year

First Quarter 18
TOA 230 3 TOA 101 1
OA 211 3 TOA 235 3
ENG 101 4 PSY 105 4

Second Quarter 18
CS 205 4 TOA 102 1
OA 212 3 TOA 297 3
ENG 102 4 General Education Elective 3

Third Quarter 16
TOA 297 3 TOA 103 1
OA 220 3 EC 200 3
TAD 232 3 TOA 297 3

Sophomore Year

Fourth Quarter 17
OA 221 3 TOA 104 1
TOA 224 3 TOA 241 3
TOA 252 3 BIO 105 4

Fifth Quarter 16
TOA 105 1 OA 222 3
TOA 225 3 TOA 242 3
TOA 233 3 TOA 253 3

Total Hours Required for Degree 97
Office Information Systems—
One-Year Certificate Program

The holder of a One-Year Certificate in today's business world is a professional person who must make decisions and project and advance the public image of the executive for whom he or she works through communication skills and writing expertise. People in these positions must be proficient in all areas of office procedures and be skilled in operation office equipment in addition to assisting the executive. The Office Information Systems Program encompasses all of these necessary skills, while giving the student a well-rounded background. The One-Year certificate is recognized by the state of Ohio as a training program, which qualifies students for entry-level administrative assistant positions.

A minimum of 45 total credits is needed in order to obtain a One-Year certificate. These must consist of a combination of technical and nontechnical classes.

Select a minimum of 33 credits from the courses below:

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<th>Course</th>
<th>Credits</th>
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<td>ENG 101</td>
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<tr>
<td>COM 203</td>
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</table>

Total Hours Required for Degree 101

Associate of Technical Study

The Associate of Technical Study degree uses courses from existing two-year technical programs along with the General Education base to fulfill a unique educational need. Intended for individuals with specialized technical interests, the Associate of Technical Study degree allows the student to develop, with the guidance of a designated faculty advisor, an individualized technical program. This program must establish an educational goal and include a concentration of courses required to accomplish that goal.

A minimum of 45 credit hours of the total program must be in a clearly identifiable area of concentration. This technical component may be developed by combining courses from two or more academic disciplines. General Education requirements and basic requirements must each account for a minimum of 21 credit hours of the program total or 42 total credit hours. The Associate of Technical Study degree requires from 90 to 110 total credit hours; graduation requirements are the same as for other A.A.S. and A.A.B. degrees.

Many job opportunities in industry and business today are requiring a broader base exposure of the technologies such as technicians, programmers, and designers. The Associate of Technical Study degree provides needed flexibility that industry finds essential as it continues to diversify and meet the needs of a changing industrial market.

Students can choose to follow a pre-designed program, modify a program, or design one to meet their own needs. Advising is a key component of these programs. Interested students should start by contacting a Lake Campus advisor to discuss the unique opportunities available through A.T.S. degrees.

Requirements for the Associate of Technical Study Degree

<table>
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<tr>
<th>Category</th>
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<table>
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<tr>
<th>Category</th>
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<tr>
<td>Basic Requirements</td>
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<td>TEG 141</td>
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<td>Math (level 3 or higher)</td>
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<td>Remaining hours to be selected from related courses deemed appropriate to the student’s elected concentration. Academic advisor approval required.</td>
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</table>
This technical component may be developed by combining courses from two or more of the academic programs in the technical area. This development is done through the guidance of a designated faculty advisor. The technical programs are: financial management, engineering technology, and office information systems.

Total Hours Required  Minimum 90

Certificates

Certificate in Management
The Certificate in Management is an 18-credit hour, three-quarter sequence of courses designed to prepare students to become effective managers. The course offerings are for persons who have had little or no formal training in management principles. All courses meet during the week and on weekends and may be applied toward an associate degree.

Fall
ACC 201-3 Accounting Concepts and Principles I
MGT 100-3 The World of Business and Administration

Winter
MGT 200-3 Elements of Management and Supervision
COM 141-3 Small-Group Communication

Spring
TMG 201-3 Fundamentals of Management
EC 201-3 Principles of Economics

Advanced Certificate in Management
The Advanced Certificate in Management is a 16-credit hour, three-quarter sequence of courses designed to prepare students to become effective managers. The course offerings are for persons who have completed the Certificate in Management. All courses meet during the week and on weekends and may be applied toward an associate degree.

Fall
TMG 270-3 Production Management
TMK 201-3 Basic Marketing I

Winter
COM 203-3 Business Communication
TMG 210-3 Personnel Management

Spring
CS 205-4 Computer Literacy and Office Automation

Certificate in Desktop Publishing
The Certificate in Desktop Publishing is a nine-credit hour, three-quarter sequence of three courses designed for the person in the office wishing to learn or implement desktop publishing skills.

Fall
TOA 241-3 Beginning Desktop Publishing

Winter
TOA 242-3 Advanced Desktop Publishing

Spring
TOA 247-3 Desktop Publishing Applications

Certificate in Word Processing
The Certificate in Word Processing is a nine-credit hour, three-quarter sequence of courses meeting on Saturdays designed for the person in the office wishing to upgrade or to implement word processing skills in an office environment and to train those desiring to learn the skill of word processing.

Fall
OA 220-3 Introduction to Word/Information Processing

Winter
OA 221-3 Intermediate Word/Information Processing

Spring
OA 222-3 Advanced Word/Information Processing

Certificate in CAD/CAM
The Certificate in “CAD/CAM” is an 18-credit hour, three-quarter sequence of courses designed to provide a thorough understanding of how the computer-aided design and manufacturing process functions in industry. The certificate program covers the fundamental principles and methods used in designing a product with AutoCAD. Additionally, the student will use CAM software to produce machinable CNC code and manufacture actual products designed in class. The certificate is designed for individuals who have a thorough understanding of drafting principles, but no CAD...
experience is assumed. In order to better serve the individuals enrolling in this program, a maximum of 12 students has been set. All courses meet during the week and on Saturdays and may be applied toward an associate degree.

Certificate in Microcomputer Applications

The Certificate in Microcomputer Applications is a 12-credit hour, three-quarter sequence of courses designed to provide a thorough coverage of many practical uses of microcomputers. A broad range of applications will be presented along with fundamental computer operations to prepare students to use microcomputers effectively at home or in business. Depending on the chosen major, some or all courses may be applicable toward an associate degree.

Fall
- TEG 297-3 Fundamentals of CAD I
- TEG 297-3 Beginning Computer-Aided Manufacturing

Winter
- TEG 297-3 Fundamentals of CAD II
- TEG 297-3 CNC Programming I

Spring
- TEG 297-3 Fundamentals of CAD III
- TEG 297-3 CNC Programming II

Fall
- CS 205-4 Computer Literacy and Office Automation

Winter
- CS 206-4 Computer Software Productivity Tools

Spring
- CS 207-4 Advanced Office Productivity II
**ABBREVIATION AND PAGE NUMBERS**

Throughout this catalog, specific courses are indicated by abbreviations followed by a number. The list below shows the abbreviations for the different areas of study, followed by the name of each area of study and the page on which the course descriptions for the areas begin.

Please note that the courses are alphabetized by the course's name, not by the abbreviation, both here and later in the course description section.

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<td>AES</td>
<td>Aerospace Science</td>
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Course Descriptions

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.

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.

Technical Course Abbreviations

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A list of course abbreviations and an explanation of the course numbering system can be found on pages 196 and 197. Not all courses described here are offered every quarter or every year. For a more detailed listing of prerequisites, enrollment restrictions, and specific courses offered in a particular quarter, consult the Wright State class schedule published each fall, winter, spring, and summer.

**Accountancy/ACC**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

**200-3 Individual Income Tax Preparation**  
Introduction to the basic concepts of income deductions, credits, and exemptions. Calculation of taxable income and preparation of the individual income tax returns and selected schedules.

**201-3, 202-3 Accounting Concepts and Principles I, II**  
Introduction to accounting for business enterprises. Includes analysis of financial statements and reports for managers and other users. Prerequisite: for 202, ACC 201.

**203-3 Introduction to Accounting Systems**  
Introduction to the collection of accounting data for use in the preparation of financial statements and other accounting reports. Course will include completion of one or more practice cases. Prerequisite: ACC 202.

All of the following courses 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. For non-majors only. Prerequisite: For MIS majors and other students who are required to take ACC 328, ACC 203. For all others, ACC 202.

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. Prerequisite: for 304, ACC 203, CS 205; for 305, ACC 304, CS 205; for 306, ACC 305.

**321-3 Management Accounting I**  
Discusses concepts, techniques, and accounting procedures for both manufacturing and service firms. Prerequisite: ACC 203, CS 205.

**322-3 Management Accounting II**  
Application of managerial accounting concepts and techniques to complex problems in manufacturing accounting and to other areas including distribution, research, and development costs. Prerequisite: ACC 321.

**328-3 Accounting Systems I**  
Fundamental concepts of information, communication, and systems that form the framework for the design of data processing and accounting systems. Prerequisite: Accountancy majors, ACC 321, MIS 300, or MIS 322; all other majors, ACC 321 or ACC 300 and MIS 300 or MIS 322.

**407-3 Financial Accounting IV**  
Comprehensive study of business combinations and consolidated financial statements. Prerequisite: ACC 306.

**412-3 Accounting Systems II**  
Application of accounting systems in handling principal business transactions and situations. Prerequisite: ACC 328.

**421-3 Auditing I**  
Discusses financial, operational, and compliance audits from the user's perspective of audit reports. Examines purpose and limitations of audits, as well as the legal and regulatory environments in which audits are performed. Prerequisite: ACC 306, 328.

**422-3 Auditing II**  
Application of auditing techniques, including planning, execution, and documentation of findings, with a focus on internal auditing. Audit sampling, auditing in a computerized environment, and other current auditing issues are discussed. Prerequisite: ACC 421.

**431-3 Governmental Accounting**  
Discusses principles of the fund accounting model. The primary focus of the course will be the application of these principles to state and local government units. Prerequisite: ACC 305.

**441-3 Income Tax Accounting I**  
Discusses history, theory, and basic tax structure pertaining to individuals and businesses. Prerequisite: ACC 203.

**442-3 Income Tax Accounting II**  
An introduction to the federal income taxation of business entities and owners. Consideration is also given to the federal income tax implications of property transfer, the alternative minimum tax, and the legal and ethical responsibilities of the tax practitioner. Prerequisite: ACC 441.

**451-3 International Accounting**  
Examines comparative country practices and the international aspects of various accounting topics—financial and managerial accounting, social accounting, inflation accounting, auditing, and taxation. Prerequisite: ACC 202 or equivalent.

**477-1 to 3 Special Topics in Accounting**  
Topics and prerequisites vary.

**478-3 Honors: Independent Study in Accountancy**  
Research in accounting for fulfillment of the Honors Program project requirement.
481-3 Internship in Accounting
One quarter, faculty-supervised internship in the areas of public, industrial, or governmental accounting. At the conclusion of the internship the student is required to submit a report based on a topic agreed upon between the student and the sponsoring faculty. Prerequisite: ACC 203.

498-3 Seminar in Management Accounting
Identification, description, and analysis of the behavioral science and quantitative methods applications for management accounting. Prerequisite: ACC 306, 322.

499-3 Seminar in Financial Accounting
Identification and analysis of contemporary issues and problems in the area of financial accounting. Prerequisite: ACC 306. Pre- or corequisite: ACC 421.

Aerospace Science/AES

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions.

121-1 The Air Force Today I
An introduction to USAF ROTC. Topics include: mission and organization of the Air Force, officerhip and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and communication skills.

122-1 The Air Force Today II
An introduction to USAF ROTC. Topics include: mission and organization of the Air Force, officerhip and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and communication skills.

123-1 The Air Force Today III
An introduction to USAF ROTC. Topics include: mission and organization of the Air Force, officerhip and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and communication skills.

221-1 The Air Force Way I
A survey course facilitating the transition from Air Force ROTC cadet to ROTC candidate. Featured topics include: Air Force heritage, leaders, Quality Air Force, ethics and values, leadership, group leadership problems, and application of communication skills.

222-1 The Air Force Way II
A survey course facilitating the transition from Air Force ROTC cadet to ROTC candidate. Featured topics include: Air Force heritage, leaders, Quality Air Force, ethics and values, leadership, group leadership problems, and application of communication skills.

223-1 The Air Force Way III
A survey course facilitating the transition from Air Force ROTC cadet to ROTC candidate. Featured topics include: Air Force heritage, leaders, Quality Air Force, ethics and values, leadership, group leadership problems, and application of communication skills.

331-3 Air Force Leadership and Management I
Study of leadership and quality management fundamentals, professional knowledge, AF doctrine, leadership ethics, and communication skills. Case studies are used to examine AF leadership and management situations.

332-3 Air Force Leadership and Management II
Study of leadership and quality management fundamentals, professional knowledge, AF doctrine, leadership ethics, and communication skills. Case studies are used to examine AF leadership and management situations.

333-3 Air Force Leadership and Management III
Study of leadership and quality management fundamentals, professional knowledge, AF doctrine, leadership ethics, and communication skills. Case studies are used to examine AF leadership and management situations.

431-3 Preparation for Active Duty I
Examines national security process, regional studies, advanced leadership ethics, and AF doctrine. Topics include the military as a profession, officerhip, military justice, civilian control of the military, current issues, and refining communication skills.

432-3 Preparation for Active Duty II
Examines national security process, regional studies, advanced leadership ethics, and AF doctrine. Topics include the military as a profession, officerhip, military justice, civilian control of the military, current issues, and refining communication skills. Prerequisite: AES 431.

433-3 Preparation for Active Duty III
Examines national security process, regional studies, advanced leadership ethics, and AF doctrine. Topics include the military as a profession, officerhip, military justice, civilian control of the military, current issues, and refining communication skills. Prerequisite: AES 432.

Anatomy/ANT

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions.

201-4 Basic Human Anatomy I
Osteology; histology of basic tissues; and topographical, histological, and developmental anatomy of nervous and endocrine systems. Laboratory exercises use human materials. 2.5 hours lecture, 3 hours lab.
202-4 Basic Human Anatomy II
Basic topographical, histological, and developmental anatomy of the muscular, cardiovascular, digestive, respiratory, urinary, and reproductive systems. Laboratory exercises use human materials. 2.5 hours lecture, 3 hours lab.

320-5 Anatomy of Human Motion
The skeletal, articular, nervous, cardiovascular, and respiratory systems as they pertain to the muscular system are presented. Basic muscle actions are described; sequential muscle actions and other concepts of kinesiology are not discussed. Prerequisite: BIO 105, 107.

488-1 Independent Reading
499-1 to 5 Selected Topics in Anatomy
May be taken for letter grade or pass/unsatisfactory.

Anthropology/ATH

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

200-3 World of Primitive Contemporaries
Survey of the world's non-Western cultures. Discussions include the various ways contemporary peoples live and the relationship between primitive and contemporary cultures.

241-3 Introduction to Physical Anthropology
An overview of human biology and behavior, including human evolution, primate behavior, and human physical variation.

242-3 Introduction to Archaeology
Introduction to the nature of archaeological data, techniques of archaeological dating, and methods of data collection, analysis, and interpretation.

250-3 Introduction to Cultural and Social Anthropology
Surveys various fields or sub-disciplines of anthropology to enable anthropology majors to complete upper-division courses effectively. Emphasis on identifying cultural symbols and social interaction in ethnic groups. Prerequisite: CST 240 or anthropology major.

300-4 Laboratory in Archaeology
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 242, 369 or permission of instructor.

340-4 Applied Anthropology: An Introduction
Introduces various aspects of applied anthropology as currently used in a variety of behavioral activity fields locally, nationally, and internationally.

341-4 Indians of North America
Survey of selected North American Indian societies, contrasting their modern and aboriginal cultures.

342-4 Anthropology of Sex and Gender
Studies similarities and differences between males and females, their status, roles in selected societies, stereotypes, physical and behavioral aspects of sex and gender, and cross-cultural variations in gender roles.

346-4 Anthropology of Religion
(Also listed as REL 362.) 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.

351-4 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, including monkeys and apes, as it relates to human evolution and behavior.

358-4 Human Variation and Adaptation
Examination of human biological variation focusing on interpopulation variation, environmental adaptation, and the concept of race.

365-4 Archaeology of North America
Detailed examination of the major prehistoric cultures of North America. Emphasis on eastern North American prehistory.

368-4 Archaeological Field Techniques
Classroom and field preparation for archaeological survey and excavations. Prerequisite: ATH 242 or permission of instructor.

369-6 to 12 Field School in Archaeology
Excavation training on prehistoric sites.

392-2 to 4 Readings in Anthropology
May be taken for letter grade or pass/unsatisfactory.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of anthropology. Topics vary.

400-4 Topics in Archaeology
Advanced study of various specialized aspects of archaeology. Classes may be lecture or seminar.

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. Emphasis on current trends influencing research in cultural anthropology. Topics vary.

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 emphasis on sub-Saharan ecological and biocultural relationships.
448-4 Development of Ethnological Thought  
Surveys historical development of ethnological thought and emphasizes theories of social and cultural change.

450-4 Political Anthropology  
(Also listed as PLS 450) Study of the cultural part of primitive societies that 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.

455-4 Biomedical Anthropology  
An anthropological perspective of health and illness in selected societies of the world. Integrates physical, social, and cultural dimensions of disease, nutrition, fertility and population growth, health beliefs and practices, and the consequences of culture change and modernization.

465-4 Seminar in Woodland Archaeology  
Intensive review of the prehistoric Woodland period (600 B.C.-A.D. 900) of eastern North America. Regional cultures such as Adena and Ohio Hopewell and topics including trade, the economy, political organization, and mortuary customs are considered.

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 242 or permission of instructor.

475-4 Historical Archaeology  
Focuses on the post-European discovery period of America. Archaeological interpretations of colonial, plantation, industrial, frontier, and urban sites and materials are explored in seminar discussions and through laboratory analyses of southwest Ohio site collections. Prerequisite: ATH 242.

492-2 to 4 Independent Research in Anthropology  
May be taken for letter grade or pass/unsatisfactory.

Art and Art History/ART

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

All courses in the Department of Art and Art History are offered with a pass/unsatisfactory grade option.

200-1 Sophomore Workshop  
Introduction to slide taking, matting and framing, and professional opportunities for art majors. This course is a prerequisite for all upper level studio art courses. Graded pass/unsatisfactory.

206-4 Drawing I  
Introduction to materials, techniques, and concepts of drawing.

207-4 Photography I  
Exploration of basic processes and concepts in still photography. Work involves learning basic skills and techniques. Assignments designed to develop an understanding of light as an expressive element.

208-4 Sculpture I  
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. Introduces the basic concepts of visual and stylistic analysis and a 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.

214-3 Visual Art in Western Culture  
Introduction to the visual arts focusing on selected major works of art throughout history. Discusses comparisons across time, basic art media, and the formal characteristics of art.

228-4 Drawing II  
Introduces concepts and techniques of drawing. May include studies from the human figure and other natural forms. Topics vary. Prerequisite: ART 206.

258-4 Photography II  
Development of personal concepts and aesthetic expression in photography. Emphasis on individualized approach to photographic problems that arise from students' work. Prerequisite: ART 207 or permission of instructor.

300-1 to 4 Studio Workshop  
Studio experience directly involving students with a professional artist executing a special project. Covers a range of information from preliminary planning to final discussion on the project. Topics vary.

301-1 to 4, 303-1 to 4 Independent Study in Art  
Special studies and intensive individual work with faculty supervision in art.

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. Prerequisite: ART 213 or permission of instructor.
328-4 Intermediate Drawing
Development of personal concepts and aesthetic expression in drawing. Emphasis on individualized approach to drawing problems that arise from the work of students. Topics vary. Prerequisite: ART 228.

337-4 Beginning Expanded Media
Study of visual and aesthetic techniques and concepts emphasizing the development of individual artistic expression in various media. Prerequisite: ART 228, 258, and 378; or permission of the instructor required.

345-4 Materials of Painting
Construction and preparation of supports for painting; grinding pigments for egg tempera, oil, pastels, and encaustic paint; lectures and discussions of all painting-related procedures and methods. Classes are lecture or studio. Prerequisite: ART 206, 209, 213.

347-4 Beginning Painting
Working from still, figure, and landscape emphasizing the use of color and drawing in visual organization. Prerequisite: ART 206, 209, 228.

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. Prerequisite: for 348, ART 347 or permission of instructor; for 349, ART 348 or permission of instructor.

358-4 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 work of students. Topics vary. Prerequisite: ART 258 or permission of instructor.

359-4 Color Photography
Development of personal concepts and aesthetic expression in photography. Emphasis on individualized approach to photographic problems that arise from the work of students. Topics vary. Prerequisite: ART 258.

366-4 Beginning Printmaking—Relief
Exploration of printmaking stressing relief methods using wood and linoleum. Exploration of aesthetic possibilities of the media. Topics vary. May be taken for letter grade or pass/unsatisfactory. Prerequisite: ART 206, 228.

367-4 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. Prerequisite: ART 206, 228 (ART 228 may be taken concurrently) or permission of instructor.

368-4 Beginning Printmaking—Lithography
Introduction to basic lithographic techniques using stone and/or metal plate. Emphasis on black-and-white printing and aesthetic possibilities of the media. Topics vary. Prerequisite: ART 206, 228 (ART 228 may be taken concurrently), or permission of instructor.

369-4 Beginning Printmaking—Screenprinting
Introduction to silk-screening techniques such as stencil cut, photo stencil, and crayon and touche resists. Exploration of aesthetic possibilities of the media. Topics vary. Prerequisite: ART 206, 207, 209 or permission of instructor.

375-4 Intermediate Sculpture—Armatures, Moulds, and Casting
Development of personal concepts and aesthetic expression in sculpture. Emphasis on individualized approach to sculptural problems using armature structure, mould making, and casting. Topics vary. Course may be repeated for credit. May be taken for letter grade or pass/unsatisfactory. Prerequisite: ART 208 or permission of instructor.

376-4 Intermediate Sculpture—Ceramic Forming and Firing
Development of personal concepts and aesthetic expression in sculpture. Emphasis on individualized approach to sculptural problems using ceramic forming and firing. Topics vary. Course may be repeated for credit. May be taken for letter grade or pass/unsatisfactory. Prerequisite: ART 208 or permission of instructor.

377-4 Intermediate Sculpture—Metal Fabricating and Stone Carving
Development of personal concepts and aesthetic expression in sculpture. Emphasis on individualized approach to sculptural problems using metal fabricating and stone carving. Topics vary. Course may be repeated for credit. May be taken for letter grade or pass/unsatisfactory. Prerequisite: ART 208 or permission of instructor.

378-4 Intermediate Sculpture—Wood Carving and Fabricating
Development of personal concepts and aesthetic expression in sculpture. Emphasis on individualized approach to sculptural problems using wood carving and wood fabricating. Topics vary. Course may be repeated for credit. May be taken for letter grade or pass/unsatisfactory. Prerequisite: ART 208 or permission of instructor.

379-4 Intermediate Sculpture—Figure Modeling
Introduction to techniques and concepts involved in sculpting from life. Concentration on the development of greater understanding of the human figure and an increased sensitivity to three-dimensional form. Course may be repeated for credit. May be taken for letter grade or pass/unsatisfactory. Prerequisite: ART 208 or permission of instructor.

397-4 Introduction to Museology
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 211, 212, 213.
400-2 Senior Seminar
Group discussions of contemporary writings in art and critiques of student work in a peer setting with faculty and visiting artists participating on an informal basis. Prerequisite: Successful completion of BFA review.

401-1 to 4 Independent Study in Art History
Intensive individual work with faculty supervision in art history.

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. Prerequisite: ART 213 or permission of instructor.

405-1 to 4 Studies in Art
Provides opportunities to explore problems and approaches to art and includes cross-media and interdisciplinary studies.

409-4 Art Theory and Criticism
Historical surveys and intensive studies of art theory and criticism. 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. Prerequisite: ART 213 or permission of instructor.

411-4 Studies in Ancient and Classical Art
(Also listed as CLS 340.) General surveys and intensive studies of the period, major movements, and artists of the time.

412-4 Studies in Medieval Art
General surveys and intensive studies of the period, major movements, and artists of the time. 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. 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. 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. 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. 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. Prerequisite: ART 213 or permission of instructor.

428-4 Advanced Drawing
Exploration of the structure and interrelationships of visual form in drawing, painting, and sculpture. Principal historical modes of drawing examined. Topics vary. Prerequisite: ART 328.

437-4 Advanced Expanded Media
Development of personal concepts and aesthetic expression in media. Emphasis on individualized approach to media problems. Prerequisite: ART 337 or permission of departmental advisor.

448-4 Advanced Painting
Continued emphasis on pictorial organization with increased attention to the personal imagery of students. Prerequisite: ART 349 or permission of instructor.

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 work of students. Topics vary. Prerequisite: ART 358 or permission of instructor.

466-4 Advanced Printmaking—Relief
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary. May be taken for letter grade or pass/unsatisfactory. Prerequisite: ART 366 or permission of the instructor.

467-4 Advanced Printmaking—Intaglio
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary. Prerequisite: ART 367 or permission of instructor.

468-4 Advanced Printmaking—Lithography
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary. Prerequisite: ART 368 or permission of instructor.

469-4 Advanced Printmaking—Screenprinting
Development of personalized concepts and individual aesthetic expression in printmaking. Topics vary. Prerequisite: ART 369 or permission of instructor.

478-4 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. Titles vary. Prerequisite: Three different intermediate sculpture courses or permission of instructor.

497-4 Advanced Museology
Classroom and supervised practical work in art gallery and museum management. Prerequisite: ART 397 or permission of instructor.

Art Education/AED
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

214-4 Foundations of Art Education
Introductory course in art education involving approaches for aesthetic awareness, inquiries into theories of art, art appreciation and criticism,
current issues, as well as child development through art, and art education methodologies.

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 programs.

225-4 Ceramics II
Advanced ceramic design, forming, wheel throwing, glaze calculations, and decoration. Includes a high degree of experimental involvement. Emphasizes advanced ceramic techniques and procedures applicable to public school art programs. Prerequisite: AED 224 or permission of instructor.

370-1 to 3 Independent Study
Planned readings, project, participation/observation clinic experiences, or other appropriate study on an independent basis.

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 programs. 425: methods of silkscreen as it may be used in public school art programs. Analysis of textile design in contemporary living. Prerequisite: AED 214 or permission of instructor.

426-4 Creative Stitches
Various methods and procedures of working with stitchoery and appliquéd forms; work with flat and stitched fabrics for wall hangings and other fabric art forms. Emphasizes stitches and fabric techniques for public school art programs. Prerequisite: AED 214 or permission of instructor.

430-3 Independent Reading in Art Education
Expands students' knowledge of philosophy, aesthetics, and creative and mental growth as related to art teaching and art education curricula. Emphasis on current books, magazines, and research in art education.

431-4 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. Pre- or corequisite: ED 327 or permission of instructor.

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
Individual problems in specified areas for the purpose of intense and concentrated work in one or more media; the development of a proficiency in one or more craft areas.

438-4 Art Methods for Schools
Develops a 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. Prerequisite: AED 431, 432; ED 214, 216, 218, 220; or equivalent. Corequisite: ED 323.

441-4 Art Appreciation and Criticism in the School
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.

442-3 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.

444-3 Art and the Special Child
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. Prerequisite: AED 431 or equivalent; or permission of instructor.

Art Therapy/AT
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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. Graded pass/unsatisfactory.

429-1 to 6 Workshop in Art Therapy
Focuses 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.
Athletic Training/ATR

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

261-4 Athletic Training I
Introductory course to the field of athletic training. 3 hours lecture, 2 hours lab. (Previously listed as HPR 261.)

262-3 Athletic Emergency Care
The recognition and management of athletic emergencies will be emphasized. The relationships of other allied health care providers in similar situations will also be discussed and studied. Prerequisite: ATR 261.

284-1 to 15 A. T. Practicum I: Care of the Physically Active
Supervised field work for sophomore students who are seeking certification or a concentration in a specific area. Topics vary. Contact hours vary according to subject. May be taken for letter grade or pass/unsatisfactory. Practicum must be in area of physical education concentration. (Previously listed as HPR 284.)

361-4 Athletic Training II
Second course in a series of three to cover the principles of athletic training. Prerequisite: ATR 261, 262, 284, 285, 286, 303.

384-1 to 15 A. T. Practicum IV: Lower Body Assessment Lab
Supervised field work for junior students seeking certification or a concentration in a specific area. Topics vary. Contact hours vary according to subject. May be taken for letter grade or pass/unsatisfactory. Practicum must be in area of physical education concentration. (Previously listed as HPR 384.)

461-4 Organization and Administration of Athletic Training
Combines the knowledge of organization and administration and how it applies to the profession of athletic training. Prerequisite: ATR 261.

484-1 to 15 A. T. Practicum VII: Clinical and Surgical Rotation
Supervised field work for senior students seeking certification or a concentration in a specific area. Topics vary. Contact hours vary according to subject. May be taken for letter grade or pass/unsatisfactory. Practicum must be in area of physical education concentration. (Previously listed as HPR 484.)

Aviation/AVI

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

100-2 Aviation Career Institute
This course is designed for students attending the WSU Summer Aviation Career Institute. Students will explore over 50 careers in aerospace: from airline pilot to aircraft engineer, from air traffic controller to avionics technician. Limited to 10th, 11th, and 12th grade students enrolled in WSU’s Summer Aviation Career Institute. Graded pass/unsatisfactory.

201-4 Private Pilot Ground Education
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.

202-3 Private Pilot Flight Training I
Eighteen hours of flight training and related lectures including primary flight maneuvers and cross country flying. Includes a one-hour per week ground school seminar at the airport. Graded pass/unsatisfactory. Prerequisite: AVI 201 or FAA written exam.

203-2 Private Pilot Flight Training II
Seventeen hours of flight training plus a one hour flight check. Meets requirements for private pilot’s certificate. Graded pass/unsatisfactory. Prerequisite: AVI 202.

301-3 Meteorology in Aviation
Meteorology theory and pilot services available for the instrument-rated pilot. Meets FAA requirements.

302-4 Instrument Ground Training
Altitude instrument interpretation and aircraft performance; approaches and procedures; and IFR regulations and flight training. Meets FAA requirements. Prerequisite: AVI 301.

303-2 Instrument Flight Training I
Two hours simulator and thirteen hours flight training with seventeen hours of related instruction. Meets FAA requirements. Laboratory fee required. Graded pass/unsatisfactory. Prerequisite: AVI 301.

304-2 Instrument Flight Training II
Two hours simulator and sixteen hours flight training with eighteen hours of related instruction and a one hour FAA exam. Meets FAA requirements. Laboratory fee required. Graded pass/unsatisfactory. Prerequisite: AVI 303.

488-1 to 6 Independent Study
Independent reading, writing, flying, and/or reporting in areas related to aviation. Topics vary. Departmental permission required.

Biochemistry and Molecular Biology/BMB

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.
210-4 Introductory Biochemistry and Nutrition
Current topics in biochemistry, molecular biology, and nutrition for non-science majors. Includes the relationship between diet and disease, mechanisms of cancer induction, hereditary and infectious disease, and applications of biotechnology that impact medicine and our daily life. No previous background in science is required.

250-4 Human Nutrition
Nutrition as an integrated science emphasizing biochemical and physiological principles. Topics include nutritional energetics, specific nutrients, and nutrition and physiology. Relation of basic concepts to clinical situations and to nutritional management of specific disease conditions. Prerequisite: BIO 105, CHM 102, or equivalent.

401-1 to 4 Topics in Biochemistry

421-4 Biochemistry I
Chemistry of biological compounds and introduction to enzymes.

423-4 Biochemistry II
Intermediate metabolism of carbohydrates, proteins, nucleic acids, and lipids. Prerequisite: BMB 421.

427-4 Human Biochemistry
Metabolism of hormones and amino acids, integration of metabolism, and aspects of human biochemistry including some metabolic disorders and nutrition. Prerequisite: BMB 421/423 or permission of instructor.

488-1 Independent Reading

495-1 to 5 Honors Research in Biochemistry
Laboratory experience in biochemistry. May be taken for letter grade or pass/unsatisfactory. Prerequisite: General chemistry and biology. Pre- or corequisite: BMB 421, 423.

499-1 to 4 Undergraduate Research
May be taken for letter grade or pass/unsatisfactory.

Biological Sciences/BIO

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

105-4 Introductory Biology: Food
Biological principles applied to the nature of food, its production, and use in the human body. Topics include molecular biology, photosynthesis, respiration, digestion, nutrition, agricultural ecosystems, and issues of feeding a rapidly growing human population. 3 hours lecture, 2 hours lab.

106-4 Introductory Biology: Biodiversity
Biological principles and processes applied to the origin, interaction, and extinction of species. Laboratory and lab topics include paleobiology, speciation, macroevolution, adaptive radiation, symbiosis, biogeography, and the scientific management of modern biological resources. 3 hours lecture, 2 hours lab.

107-4 Introductory Biology: Disease
Biological principles applied to the study of disease: causes, controls, and natural defense against infection. Topics include microscopy, pathology, antibiotics, immunology, and epidemiology with historical perspectives and an emphasis on investigative techniques. 3 hours lecture, 2 hours lab. Prerequisite: BIO 106.

112-4 Principles of Biology: Cell Biology and Genetics
Introduction to basic concepts of biology. Topics include genetics and the molecular and cellular basis for the unity of life. 3 hours lecture, 2 hours lab.

114-4 Organismic Biology
Introduction to the structure and function of plants and animals. 3 hours lecture, 2 hours lab. Prerequisite: BIO 112.

115-4 Principles of Biology: Diversity and Ecology
Introduction to basic concepts of biology. Topics include evolution, ecology, and the diversity of life. 3 hours lecture, 2 hours lab. Prerequisite: BIO 112.

119-1 Honors Recitation, Principles of Biology (112, 114, 115)
Recitation/discussion section to review basic concepts developed in the laboratory. Coregistration in lecture and honors laboratory required.

194-1 Introduction to Exercise Science
An introduction to the research literature and to the fields of study within the discipline of exercise science.

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.

201-1 to 3 Topics in Biology
Selected biological topics of current interest.

210-4 Molecular Biology
Emphasizes understanding of the chemical and physical aspects of molecular interactions and the flow of genetic information from DNA to protein. Prerequisite: BIO 112, 114, 115; CHM 121, 122, 123.

211-4 Molecular Genetics
Emphasizes understanding of the control of gene expression in both prokaryotes and eukaryotes. Includes study of chromosome structure, replication, recombination, and repair. Prerequisite: BIO 112, 114, 115, 210; CHM 121, 122, 123.

212-4 Cell Biology
Emphasizes eukaryotic cell structure and function, including energetics and involvement of various organelles. Prerequisite: BIO 112, 114, 115, 211; CHM 121, 122, 123.
221-4 Human Lifespan Motor Development
Study of somatic and physiological changes and their influence on human motor development across the lifespan.

252-5 Microbiology
Study of morphology, cultivation, and biochemical activities of microorganisms. Survey of viruses, bacteria, blue-green algae, fungi, and their diversity in natural environments. 3 hours lecture, 4 hours lab. Prerequisite: One year introductory biology.

253-5 Biology of Lower Plants
Study of morphology, taxonomy, and ecology of algae, fungi, and bryophytes. Emphasis on growth and developmental patterns, modes of reproduction, importance to humans and to ecosystems, diversity, distribution, and phylogenetic relationships. 2 hours lecture, 6 hours lab. Prerequisite: One year introductory biology.

254-5 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: One year introductory biology.

255-5 Biology of the Invertebrates
Morphology, development, physiology, and evolutionary relationships of major invertebrate groups. 3 hours lecture, 4 hours lab. Prerequisite: One year introductory biology.

256-5 Biology of the Vertebrates
Introduction to the anatomy and evolutionary history of vertebrate animals. 3 hours lecture, 4 hours lab. Prerequisite: BI0 112, 114, 115.

266-2 Practicum in Exercise Science
Designed to involve exercise science students in a first level practicum experience. Experiences include: fitness centers, fitness assessment, anthropometry, and laboratory/research assistant. Sophomore standing. Prerequisite: BIO 194.

267-2 Practicum in Exercise Science
Designed to involve exercise science students in a continuation of their first level of field experience during their sophomore year. This experience involves one or more of the following: fitness center placement, fitness assessment, anthropometry, and laboratory assistant/research assistant. Prerequisite: BIO 266.

278-4.5 Anatomy and Physiology I
Lecture topics in human anatomy and physiology, including tissues: skeletal, muscular, nervous, and endocrine systems. Laboratory features cat dissection and physiological techniques complementary to the lecture topics. Prerequisite: BIO 112.

279-4.5 Anatomy and Physiology II
Lecture topics in human anatomy and physiology including the cardiovascular, respiratory, digestive, excretory, and reproductive systems. Laboratory features cat dissection and physiological techniques complementary to the lecture topics. Prerequisite: BIO 278.

294-1 Introduction to Medical Technology
Familiarizes students with the medical-technology profession and the educational programs required to become a medical technologist.

302-4 Genetics
The nature and function of genetic material with emphasis on transmission and population genetics. Exceptions to and extensions of Mendelian analysis, gene mapping, quantitative genetics, and the change of gene frequencies with time. 3 hours lecture, 1 hour recitation. Prerequisite: BIO 210 and MTH 130, or consent 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 that set plants apart from other organisms. Laboratory introduces independent research concerning plant nutrition and bud development. 3 hours lecture, 4 hours lab. Prerequisite: BIO 253 or 254; CHM 123.

305-3 Animal Physiology
Basic adaptive mechanisms and their coordination in the activities of the metazoa. Prerequisite: One year introductory biology; and BIO 255 or 256.

306-5 Ecology
Introduction to ecology; emphasis on the organism's interaction with the environment. 3 hours lecture, 4 hours lab. Prerequisite: One year introductory biology.

308-2 Animal Physiology Laboratory
Laboratory studies of basic adaptive mechanisms and their coordination in the activities of the metazoa. Prerequisite: BIO 112, 115; and BIO 255 or 256.

310-3 Issues in Science
(Also listed as CHM 310, PHY 310, MTH 310 and GL 310.) A writing-intensive course dealing with issues in science. Prerequisite: ENG 101, 102; a first-year science course.

345-4.5 Concepts in Biology
An accelerated treatment of fundamental concepts and applications of biology for Elementary Education majors. Topics and activities organized specifically to prepare students for science teaching at levels K–8. For Elementary Education majors only. Integrated lecture/lab. Prerequisite: PHY 245; CHM 245.
352-4 Human Biomechanics
An analysis of muscular interrelationships in basic body movements and an analysis of principles of mechanics as they relate to fundamental and complex motor skills. Prerequisite: BIO 278 and 279 or ANT 201 and 202 or equivalent.

353-4 Exercise Physiology I
Physiological adjustments and changes occurring in the human organism as a result of homeostatic challenges. Prerequisite: BIO 279 or equivalent.

354-4 Exercise Physiology II
Exercise physiology as it is applied to fitness and performance. Programs that distinguish between health-related fitness and physiology of maximal performance will be discussed. Prerequisite: BIO 279, 278.

360-4 Exercise Prescription
Study of exercise program design and implementation involving apparently healthy individuals, those at higher risk, and those with controlled disease. Emphasis is placed on cardiorespiratory and neuromuscular exercise prescription and implementation. Prerequisite: BIO 353, BIO 456.

366-2 Practicum in Exercise Science
Designed to involve exercise science students in a continuation of their practicum experience. Experiences include: sports medicine centers, EKG/advanced fitness assessment, and laboratory/research assistant. Junior standing. Prerequisite: BIO 267.

367-2 Practicum in Exercise Science
Designed to involve exercise science students in a continuation of their practicum experience. Experiences include: sports medicine centers, EKG/advanced fitness assessment, and laboratory/research assistant. Junior standing. Prerequisite: BIO 366.

399-1 Undergraduate Teaching Assistant
Supervised experience in preparing materials and apparatus for laboratory sessions in the biological sciences. Students will work with course staff on a regularly scheduled basis to develop the practices and skills associated with laboratory teaching responsibility, and assist course staff in teaching the laboratory. May be repeated for up to 3 credits. Graded pass/unsatisfactory. Prerequisite: Junior standing and GPA of 3.0.

401-1 to 3 Topics in Modern Biology
Advanced topics in modern biology of current interest. Topics vary.

403-5 Developmental Biology
Describes underlying processes that initiate, in plants and animals, the development of tissues and the whole organism. Laboratory exercises highlight developmental processes. 3 hours lecture, 4 hours lab. Prerequisite: BIO 115, 212.

404-6 Basic Electron Microscopy
Basic theory and practical experience in transmission electron microscopic technology. Animal, plant, and particulate specimens are processed in the laboratory. Prerequisite: BIO 303 or 212, completion of chemistry requirement, and permission of instructor.

406-3 Evolutionary Biology
Historical development and current understanding of the principles of evolution. Prerequisite: BIO 112, 114, 115, 212. Junior standing required.

407-5 Wetlands Biology
Ecological investigation of wetlands of U.S., with emphasis on Midwest. Primarily field oriented and some lecture. Covers soils, vegetation, hydrology, conservation, and restoration. Requires two weekend trips and written report. Prerequisite: Junior or Senior standing; CHM 121, One of the following: BIO 306, BIO 254, GL 450, BIO 401, BIO 411, or relevant field experience.

408-3 Writing in the Biological Sciences
Surveys grammatical and stylistic aspects of scientific writing and teaches students how to organize, write, and submit a manuscript for publication in a biological journal. Writing grants will also be discussed. Prerequisite: One year introductory biology.

410-4 Cell-Molecular Biology Laboratory
Introduction to methods used in cell biology for isolating and detecting intracellular components and in molecular biology for manipulating DNA. Prerequisite: BIO 210, 211, 212; CHM 211, 212, 213.

411-6 The Aquatic Environment
Introduction to limnology. Field and laboratory course concerned with physical, chemical, and biological factors that characterize natural waters.

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.

415-4 Environmental Toxicology
Covers toxicological problems encountered in the field of environmental health. Emphasis 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.

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.
421-3 Human Genetics for Health Professionals  
Describes mechanism of inheritance and genetic diseases so that health professionals can recognize possible genetic abnormalities and make appropriate referrals, participate in genetic counseling, and consider ethical and legal implications of the "new genetics." For nonmajors only. Prerequisite: BIO 112 or equivalent.

425-5 Microbial Ecology  
Microbes in soil, water, and air. Experiments on mineral cycles, physical and biological limiting factors, and environments. Includes field studies. Prerequisite: CHM 123.

426-4 Human Genetics  
Nature of human genetic traits, methods of analysis of inheritance. Prerequisite: BIO 302.

429-5 Plant Anatomy  
Examines the internal structure of vascular plants. Special emphasis is placed on structure-function relations and their adaptive significance. Prerequisite: One year introductory biology.

437-6 Recombinant DNA Methods  
(Also listed as BMS 790, BIO 737, M&I 437, M&I 737.) Microbial and molecular techniques for producing, cloning, and characterizing recombinant DNA molecules. Laboratory exercises in gene manipulation give an understanding of the principles of genetic engineering. Prerequisite: BIO 210, 211, 410.

442-3 Advanced Molecular Biology  
Topics emphasizing gene organization and genome organization will center on the molecular anatomy, expression and regulation of eukaryotic genes. Includes a thorough discussion of recombinant DNA technology. Prerequisite: BIO 210, 211, 212, 410; CHM 211, 212, 213.

451-4 Motor Learning and Control  
Study of the factors which influence the acquisition and control of human movement.

456-4 Measurement and Evaluation in Exercise Science  
The identification, administration, and evaluation of physiological and motor performance assessments. Prerequisite: BIO 221 and 353 (or taken concurrently).

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.

466-4 to 6 Practicum in Exercise Science  
Designed to involve exercise science students in a culminating practicum experience in their field of study during their senior year. The experience involves work site training or a research project. Prerequisite: BIO 367.

473-5 Biology of Selected Marine Environments  
Biological aspects of marine environments. Sampling and observation of living marine specimens during week-long trip to marine laboratory.

475-2 Microbiology of Food Laboratory  
Methods for evaluating microbial quality of food. Includes investigation of major pathogens, and techniques and principles of processing food. Completion of a laboratory course in general microbiology required. Prerequisite: BIO 252 or M&I 220. Corequisite: BIO 464.

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.

477-3 Human Parasitology Laboratory  
Examination and identification of protozoan, helminthic, and arthropod parasites of humans. Corequisite: BIO 476.

480-3 Biology of Fishes  
An introduction to the evolution, ecology, and distribution of freshwater and marine fishes. Prerequisite: Junior standing required.

481-2 Biology of Fishes Lab  
Anatomy and identification of freshwater and marine fishes with emphasis on local forms. Field trips required. Prerequisite: Junior standing.

482-3 Exercise Sciences Senior Seminar  
A culminating and in-depth synthesis of the research literature pertaining to the field of exercise science. Prerequisite: Completion of Area B in Exercise Science track or instructor permission.

484-3 Biogeography  
(Also listed as GEO 484.) Introduction to the factors affecting the distribution of plants and animals. Prerequisite: BIO 112, 115, and BIO 306.

488-1 Independent Reading  
Graded pass/unsatisfactory.

490-9 to 12 Biology Internship  
Off-campus experience in cooperating scientific agency or industrial organization. Reports and specific assignments determined in consultation with faculty advisor and supervising professionals. Junior standing in biology and department approval required.

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 credits and one recitation.

495-1 to 5 Senior Honors Research  
499-1 to 3 Special Problems in Biology
Biomedical Engineering/BME

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

155-4 Adaptive Computer Technology
Presented for physically impaired students for the purpose of familiarizing them with adaptive computer usage. It is structured to teach necessary skills related to each student’s rehabilitative needs.

300-0 Honors Program Seminar
An orientation course intended for juniors who have demonstrated exceptional academic ability and desire to conduct meaningful independent research or solve unique engineering design projects during their senior year. Meets 5 times during quarter. Graded pass/unsatisfactory.

402-2 Biomedical Engineering Design II Laboratory
Design project teams will meet with their advisor(s) on a weekly basis to review progress, make assignments, and further incubate students with design methods. Prerequisite: BME 440, 461, 491; concurrent enrollment in BME 492 is required.

403-2 Biomedical Engineering Design III Laboratory
Design project teams will meet with their advisor(s) on a weekly basis to review progress, make assignments, and further incubate students with design methods. Prerequisite: BME 492; concurrent enrollment in BME 493 is required.

419-3 Biomedical Engineering Systems I
Derivation and use of the basic conservation laws underlying the fluid mechanical behavior of the cardiopulmonary system. Includes applications to the flows of blood, pulmonary air, and extracorporeal fluids. Prerequisite: ME 212, 315, MTH 233.

420-3 Biomedical Engineering Systems II
Introduction to transport phenomena in biomedical engineering and physiological systems. Energy and mass balances together with constitutive and empirical relationships are used in quantifying such topics as body heat loss by the various modes, diffusion mass transport, and heat/mass transport in applicable technological systems. Prerequisite: BME 419.

422-3 Engineering Biophysics
Application of mathematical and engineering techniques toward describing biophysical systems. Topics include cellular transport, electrical properties of membranes, and biophysics of muscle contraction. Prerequisite: EE 321 or permission of instructor.

428-3 Biomechanics and Biothermodynamics
Application of solid mechanics and thermodynamics toward describing physiological systems. Topics include mechanics of the skeletal, cardiac, and pulmonary systems, and analysis of the biothermal regulation system. Prerequisite: ME 212, 315 or permission of instructor.

439-4 Biotransport and Artificial Organs
Introduction to transport processes vital to the design of medical devices for artificial intervention into living systems. Topics include circulatory system dynamics, mathematical modeling of physiological systems, membrane transport, and biological/artificial organ design. Prerequisite: BME 420.

440-4 Biomaterials
Application of properties of materials and solid mechanics to problems and design of medical implants, external prostheses, and living tissues. Topics include mechanical properties of biologic and synthetic materials, stress-strain analysis, viscoelasticity, tissue response to implants and vice versa, and implant materials for interfacing with hard and soft tissues and blood. Prerequisite: ME 213, EE 321.

461-4 Bioinstrumentation I
Principles of design and analysis of electronic instrumentation for medical applications. Topics include various electrodes/transducers for physiological measurement, imaging modalities, and electrical safety. Prerequisite: EE 401, 402, 413, 414.

462-4 Bioinstrumentation II
Continuation of principles of design and analysis of electronic instrumentation for medical applications. Topics include various electrodes/transducers for physiological measurement and electrical stimulation, biological signal acquisition and processing, various medical imaging modalities/systems, and electrical safety. Prerequisite: BME 461.

463-2 Biomedical Computers I
Digital computer applications in biomedical related fields. Use of software to solve biomedical problems and display the results. Prerequisite: CEG 220, EE 301.

464-4 Biomedical Computers II
Principles, hardware structure, and programming techniques of microprocessors. Applications of microprocessor-based systems in hospitals, rehabilitation engineering, and medical research. Prerequisite: BME 463.

470-3 Photon Radiation
Basic introduction to generation, effects, and detection of ionizing radiation and its application to medicine. Successful completion of this course entitles students to be registered users of radioactive isotopes. Prerequisite: PHY 242, 244, BIO 279.

471-3 Medical Imaging
Overview of the various methods used in generating images in medicine. Basic principles of the image-forming process and the physical properties of the resultant image are discussed. Prerequisite: BME 470.
491-3 Biomedical Engineering Design I
Individualized design projects allowing students to make use of design and analytical skills.
Prerequisite: BME 420. Corequisite: BME 440, 461.

492-1 Biomedical Engineering Design II
Individualized design projects allowing students to use design and analytical skills. Prerequisite: BME 440, 461, 491; concurrent enrollment in BME 402 is required.

493-3 Biomedical Engineering Design III
Individualized design projects allowing students to use design and analytical skills. Prerequisite: BME 492; concurrent enrollment in BME 403 is required.

499-1 to 5 Special Problems in Engineering
Special problems in advanced engineering topics. Topics vary.

Business/BUS

100-3 Horizons in Business
Covers the range of activities, challenges, opportunities, and career paths in the world of U.S. and global business. Includes an overview and introduction to such diverse areas as the economic setting, international business, the structure of business, management of American business, human resources, marketing, information systems, accounting, finance, and ethics in business.

480-3 to 6 Special Topics in Business
Topics vary. May be taken for letter grade or pass/unsatisfactory.

481-1 to 6 International Trade Internship
Practical application in international trade. Integrates academic learning with work experiences. Students apply classroom learning in an organizational setting. Limited to International Business majors with senior status. Prerequisite: Permission of instructor.

486-3 International Trade Management
Overview and application of the concepts and principles required to conduct import and export operations within the firm. Students apply international trade management concepts through participation in an international trade team project. Prerequisite: MGT 302; MKT 302; FIN 302; EC 441.

Chemistry/CHM

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.

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.

105-4 Chemistry of Our World: Living Things
Examination of the principles of covalent bonding, structures, and reactions of molecules important to living things, with attention to the technological, regulatory, and social complexities of problems related to them. 3 hours lecture, 2 hours lab.

106-4 Chemistry of Our World: Materials
Examination of the bonding of metals and nonmetals to explain the nature of familiar materials of industrial importance. Attention to the risk/benefit implications of these materials and technologies for consumers. 3 hours lecture, 3 hours lab. Prerequisite: 3 units of high-school science or equivalent; or CHM 101; or CHM 105.

107-4 Chemistry of Our World: Energy and the Environment
Examination of gaseous and liquid states and thermochemistry as a basis for understanding air and water quality and fossil and nuclear fuels. Attention to the chemistry of the solar system. 3 hours lecture, 2 hours lab. Prerequisite: 3 units of high-school science or equivalent; or CHM 101; or CHM 106.

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: High school chemistry or CHM 101; and MTH 127 or level 4 on math placement test.

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.

123-5 Reaction Dynamics
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 128 or 129 or level 5 on math placement test.

191-5 Modern General Chemistry I: Organic
Organic chemistry with its applications is presented with fundamental chemical concepts introduced as they are necessary to explain the subject. Prerequisite: High school chemistry or CHM 101; and MTH 127 or level 4 on math placement test.

192-5 Modern General Chemistry II: Materials
Useful materials are presented from a chemical point of view with fundamental concepts introduced as needed. Prerequisite: CHM 191.
193-5 Modern General Chemistry III: Energy
The relationships between energy and matter are explored with fundamental chemical concepts introduced as needed. Prerequisite: CHM 192 and MTH 128 or 129 or level 5 on math placement test.

211-4, 212-4, 213-4 Organic Chemistry
Principles, theories, and applications of the chemistry of carbon compounds. 3 hours lecture, 1 hour recitation. Prerequisite: for CHM 211, CHM 123; for CHM 212, CHM 211; for CHM 213, CHM 212. Corequisite: for CHM 211, CHM 215; for CHM 212, CHM 216; for CHM 213, CHM 217.

215-2 Organic Chemistry Laboratory I
Laboratory illustrations of CHM 211 lecture material and techniques of preparative organic chemistry. Prerequisite: CHM 123. Corequisite: CHM 211.

216-2 Organic Chemistry Laboratory II
Laboratory illustrations of CHM 212 lecture material and techniques of preparative organic chemistry. Prerequisite: CHM 123. Corequisite: CHM 212.

217-2 Organic Chemistry Laboratory III
Laboratory illustrations of CHM 213 lecture material and techniques of preparative organic chemistry. Prerequisite: CHM 123. Corequisite: CHM 213.

245-4.5 Concepts in Chemistry
An accelerated treatment of fundamental concepts and applications of chemistry for elementary education majors. Those concrete observable topics most appropriate for presentation to elementary and middle school students will be emphasized. Demonstrations and activities are used extensively. For Elementary Education majors. Integrated lecture/lab. Prerequisite: MTH 127 or level 4 on math placement test and MTH 145.

302-4 Environmental Chemistry
(Also listed as CHM 502.) Water, air, and soil chemistry including pollutants added to these environments and how they interact to create environmental problems. 3 hours lecture, 3 hours lab. Prerequisite: CHM 123 or 193.

310-3 Issues in Science
(Also listed as BIO 310, PHY 310, MTH 310, and GL 310.) A writing-intensive course dealing with issues in science. Prerequisite: ENG 101, 102; a first-year science course.

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 123. Corequisite: CHM 314.

314-4.5 Quantitative Analysis Laboratory

361-4 The Organic Chemistry of Engineering Materials
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 122.

402-4 Advanced Environmental Chemistry and Analysis
(Also listed as CHM 602.) Environmental sampling and analysis using instrumental techniques. Chemical fate prediction by measurement and examination of physical and chemical properties, 3 hours lecture, 3 hours lab. Prerequisites: CHM 312/314 and 213; or permission of instructor.

410-3.5 Environmental Chemistry I: Air
Study of the 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 permission of instructor.

411-3.5 Environmental Chemistry II: Water
Study of the 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 permission of instructor.

412-3.5 Environmental Chemistry III: Solids
A survey of the 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 permission of instructor.

417-3 Applied Chemical Spectroscopy
The practical applications of various spectrophotometric techniques (mass spectroscopy, infrared spectroscopy, ultraviolet spectroscopy, and nuclear magnetic resonance) are integrated for the elucidation of the structure of organic molecules. A problem-solving approach is used. Prerequisite: CHM 213, 312, 452 or permission of instructor.

419-3 Chemical Literature and Composition
Literature searching of journals, handbooks, abstracts, and patents. Writing of literature reports, abstracts, papers, and reports. 3 lectures. Prerequisite: CHM 212, 451. (Previously listed as CHM 319.)
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. Prerequisite: CHM 453 or permission of instructor.

425-3 Advanced Inorganic Synthesis and Characterization
Advanced synthesis and characterization of representative inorganic compounds. Prerequisite: CHM 417, 420 or permission of instructor.

435-3 Instrumental Analysis
Introduction to the theory and practice of modern chemical instrumentation. Elementary electronics, spectrophotometry, atomic absorption, electronic techniques, chromatography, and other instrumental techniques. Prerequisite: CHM 312.

436-4.5 Instrumental Analysis Laboratory
Introduction to experimental instrumental analysis. Practical experience in the operation of chemical instrumentation; emphasizes applications of material presented in CHM 435. Prerequisite: CHM 312, 452. Corequisite: CHM 436.

440-3, 441-3 Synthetic Medicinal Chemistry I, II
Covers various chemical aspects of drugs including synthetic design, mode of action, and use 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 that 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.

445-3 Advanced Organic Synthesis and Characterization
Advanced synthesis and identification of organic compounds. 1 hour lecture, 4 hours lab. Prerequisite: CHM 213, 217, 417.

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. Prerequisite: for 451, CHM 123, MTH 231, and PHY 242 or 113; for 452, CHM 451; for 453, CHM 452; or permission of instructor.

457-3 Physical Chemistry Laboratory I
Experimental methods of physical chemistry. Prerequisite: CHM 312, 314. Corequisite: CHM 452.

458-3 Physical Chemistry Laboratory II
Experimental methods of physical chemistry. Prerequisite: CHM 457. Corequisite: CHM 453.

461-3 Synthetic Polymer Chemistry
Step-growth and chain-growth polymerization in homogeneous and heterogeneous media; properties of commercial polymers. Prerequisite: CHM 213 and 451; or CHM 361; or permission of instructor.

465-3 Physical Polymer Chemistry
Introduction to the structural and physical aspects of macromolecules; emphasis on the relationship of polymer structure to physical and mechanical properties. Prerequisite: CHM 213 and 451; or 361; or permission of instructor. Corequisite: CHM 467.

467-1 to 2 Physical Polymer Chemistry Laboratory
Laboratory illustrations of CHM 465 lecture material and techniques of polymer science. Corequisite: CHM 465.

468-1 to 2 Polymer Synthesis Laboratory
Laboratory illustrations of CHM 461 lecture material and techniques of polymer science. Pre- or corequisite: CHM 461.

469-4 Engineering Plastics: Materials, Processes, and Design
(Also listed as ME 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
(Also listed as ME 479.) Survey of principles of corrosion processes with application to metallic and nonmetallic materials. Principles of electrochemistry are included. Prerequisite: ME 315, 371, or corequisite CHM 453, or permission of instructor.

488-1 to 3 Independent Reading

499-1 to 5 Special Problems in Chemistry

Chinese/CHI

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

111-4 Essentials of Chinese
Introduction to Chinese with emphasis on speaking the language.

Classics/CLS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.
### Course Descriptions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-4</td>
<td>Medical and Scientific Terminology</td>
<td>Spelling, recognition, and understanding contemporary specialized medical and scientific vocabulary that is based on the Latin and Greek languages. Emphasis on terminology of the medical sciences.</td>
</tr>
<tr>
<td>150-3</td>
<td>Greek and Roman Culture</td>
<td>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, and philosophy, religion, mythology, literature, art, and architecture.</td>
</tr>
<tr>
<td>160-3</td>
<td>Introduction to Classical Mythology</td>
<td>Survey of the myths and legends of ancient Greece and Rome that are an important part of the Western literary and cultural tradition. Emphasis on story patterns and characters.</td>
</tr>
<tr>
<td>300-4</td>
<td>How We Know about Antiquity</td>
<td>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.</td>
</tr>
<tr>
<td>310-4</td>
<td>The Golden Age of Greece</td>
<td>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.</td>
</tr>
<tr>
<td>320-4</td>
<td>Rome: Republic and Empire</td>
<td>Emphasis on Late Republic and Early Empire, particularly the Augustan Age. The idealism of Virgil and Lucretius; the realism of Cicero, Sallust, and Tacitus.</td>
</tr>
<tr>
<td>330-4</td>
<td>Studies in Ancient Literature</td>
<td>Drama, epic, and lyric poetry; prose; selected themes in ancient literature; and literary criticism.</td>
</tr>
<tr>
<td>340-4</td>
<td>Studies in Ancient Art and Archaeology</td>
<td>(Also listed as ART 411.) Greece in the Bronze Age; classical Greece and Rome; and selected areas of Greek and Roman archaeology.</td>
</tr>
<tr>
<td>350-4</td>
<td>Studies in Ancient Culture and Society</td>
<td>Greek and Roman civilization with evidence from art, literature, archaeology, law, and other sources.</td>
</tr>
<tr>
<td>360-4</td>
<td>Studies in Ancient Mythology</td>
<td>Greek and Roman mythology; aspects and approaches to the study of myths; and archaeological and nonliterary sources.</td>
</tr>
<tr>
<td>370-4</td>
<td>Studies in Ancient Law, Government, and Politics</td>
<td>Law and legal systems of Greece and Rome; government and administration; and political problems of the ancient world.</td>
</tr>
<tr>
<td>399-1 to 4</td>
<td>Studies in Selected Subjects</td>
<td>Course of variable content dealing with problems, approaches, and topics in the field of classics.</td>
</tr>
<tr>
<td>481-4</td>
<td>Independent Reading</td>
<td>Directed studies in literature, mythology, archaeology, law, and government. For classical humanities majors only.</td>
</tr>
<tr>
<td>499-2</td>
<td>Senior Comprehensive Review</td>
<td>Required of majors in the classics, Greek, or Latin. Independent study and review leading to comprehensive examination based on the course work undertaken by each individual student. For classics, Greek, or Latin majors only.</td>
</tr>
</tbody>
</table>

### Communication/COM

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

<table>
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<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>101-3</td>
<td>Essentials of Public Address</td>
<td>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.</td>
</tr>
<tr>
<td>102-3</td>
<td>Essentials of Interpersonal Communication</td>
<td>Introduction to intrapersonal and interpersonal communication processes as they affect communication style and competence. Emphasis on a holistic approach to communication by understanding concepts, analyzing experiences, and practicing new skills.</td>
</tr>
<tr>
<td>103-3</td>
<td>Communication for Teachers</td>
<td>Examination of types of communication in the classroom. Principles and practice of oral and written communication in story-telling, lecturing, discussion, and interpersonal communication. For elementary education majors only.</td>
</tr>
<tr>
<td>111-3</td>
<td>Oral Interpretation</td>
<td>Introduction to the oral experience of literature. Theory and technique of oral reading. Frequency performances by students.</td>
</tr>
<tr>
<td>130-1</td>
<td>Introduction to Communication Activities</td>
<td>Research, practice, and participation in communication forums, symposia, or an oral communication project designed to meet the interest of individual students. Independent study. Graded pass/unsatisfactory.</td>
</tr>
<tr>
<td>133-2</td>
<td>Parliamentary Procedure</td>
<td>Theory and practice in parliamentary procedure, including an examination of principal motions, constructing a constitution, managing a meeting, and major parliamentary law cases.</td>
</tr>
<tr>
<td>141-3</td>
<td>Small-Group Communication</td>
<td>Theory and practice in small-group communication with projects in definition, analysis, research, organization, logical processes, and leadership. Prerequisite: COM 102.</td>
</tr>
</tbody>
</table>
152-3 Mass Communication
Study of the types, functions, and impact of the various mass communication media.

200-4 Writing to Communicate
Instruction and practice in writing to inform and persuade, emphasizing analysis of purpose, strategy, organization, style, correct language. Instruction in use of information sources, including computer-linked data bases. Communication majors only.

221-3 Voice and Articulation
Theory and practice of voice and articulation effectiveness.

232-3 Basic Video Production
Projects in analysis, research, briefing, ordering of arguments and evidence, refutation, audience evaluation, argumentative composition, and delivery. Prerequisite: COM 101 or permission of instructor.

253-3 Basic Media Writing
(Also listed as TH 253.) A basic introduction to the use of video production equipment using lecture, demonstration, and experiential approaches. Appropriate laboratory time provided in television studio. Prerequisite: COM 152 or permission of instructor.

256-4 Basic Media Writing
(Also listed as ENG 257.) Introduction to writing for media. Structure and organization of media copy. Course requires reporting in the field. Prerequisite: COM 152 and permission of instructor.

325-4 Health Communication
Examination of the basic themes and issues that have developed in health communication research including physician-patient and nurse-patient communications, organizational communication in health care organizations, and relationships among care providers.

330-1 Advanced Communication Activities
Research, practice, and participation in communication forums, symposia, or an oral communication project designed to meet the interest of individual students. Independent study. Graded pass/unsatisfactory.

333-4 Persuasion

335-4 Survey of Rhetorical Theory
Overview of general rhetorical theory from classical Greek and Roman foundations to modern rhetoric. Emphasis on selected works of scholars and rhetoricians. Prerequisite: COM 101 or permission of instructor.

340-4 Effective Listening
Development of listening skills for discriminative, comprehensive, therapeutic, critical, appreciative purposes, and for interpersonal, group, and public contexts. Prerequisite: COM 101 and COM 102.

343-4 Communication and Human Relations
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.

345-4 Public Relations: Principles and Practices
Simulation focusing 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 students. Prerequisite: COM 256 and permission of instructor.

346-4 Public Relations Campaign Techniques
Development of skills necessary for effective planning and implementation of public relations campaigns. Includes audiences and media analysis, and the design and writing of a variety of campaign materials. Prerequisite: COM 345.

347-4 Case Studies in Public Relations
In-depth analysis of the public relations process through an examination of various cases involving public relations problems. Prerequisite: COM 345.

358-4 Emerging Communication Technologies
Examination of the major issues facing the American mass media, including such topics as media effects, content of programming, the commercialization of public broadcasting, media ownership, children's programming, and others. Prerequisite: COM 152.

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.

364-4 Communication Graphics
(Also listed as ENG 364.) Introduces basic concepts of graphics communication, primarily as applied to print media. Includes history and basic principles of graphics communication, typography, photo editing, and graphic design.

365-4 Issues in Mass Communication
An in-depth examination of the major issues facing the American mass media, including such topics as media effects, content of programming, the commercialization of public broadcasting, media ownership, children's programming, and others. Prerequisite: COM 152.

366-4 Advanced News Writing
(Also listed as ENG 366.) Advanced study of writing skills, practices, and procedures used in reporting news for mass media. Actual reporting in the field is required. News writing skills introduced in COM 256 are further refined. Prerequisite: COM 256.
399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of speech. Topics vary.

400-2 Senior Seminar in Communication
A capstone course in which advanced communication majors develop portfolios to demonstrate achievements as preparation for careers in professional or academic areas of communication. Course includes formal assessment of communication skills. Senior standing required. Prerequisite: At least 44 hours of communication courses, including COM 101 and COM 200.

401-4 Communication Theory
A study of various classical and contemporary theories of communication. An examination of theories related to communication systems, communication interaction, and social contexts. Prerequisite: Open only to communication majors and minors who have satisfactorily completed COM 101, 102, 141, and 152.

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.

429-4 Urban Communications Theory
(Also listed as PLS 429.) 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 Gender and Communication
Theoretical and pragmatic consideration of how and why men’s and women’s communication behaviors are similar to one another in some instances, yet different in others, and how men and women can communicate more effectively. Prerequisite: COM 102.

439-4 Freedom of Speech
Study of the growth and development of free speech in the United States. Emphasizes 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
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 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.

445-4 Conference Leadership
Simulation focusing 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 101, 141, 102.

446-4 Introduction to Organizational Communication
Elements of the communication process as pertinent to the field of organizational communication. By developing understanding, a framework is established for contextual applications of the features of organizations. For communication majors only.

447-4 Organizational Communication: Applications and Strategies
Application of organizational communication theories and major theoretical perspectives to problems in public and private-sector organizations. Course includes a simulation which focuses on conflict management, leadership, and decision making in a business context.

448-4 Case Studies in Organizational Communication
A critical analysis of communication issues and problems in organizations through an examination of various cases. Prerequisite: COM 446, 447.

449-4 Survey of Communication Research
Provides a basic knowledge of the behavioral approach and current theories and experiments in communications research.

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 447 or permission of instructor.

453-4 Communication and Conflict
In-depth study of the function of communication in conflict/crisis situations. Emphasizes the role that communication performs in conflict resolution in intrapersonal, interpersonal, group, and international situations.

454-4 Feature Story Writing
(Also listed as ENG 454.) 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 methods of sending and receiving nonverbal communication. Prerequisite: COM 102 or 141.

457-4 Intercultural Communication
Study of communication in intercultural environments. Emphasis on research and theory to better understand the complexity of intercultural communication interactions.
Course Descriptions

**Comparative Studies/CST/CSE**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

**CST 220-3 Comparative Non-Western Environments**
Examination of distinctive environments of Asia and Africa through analysis of the geographic patterns of land use, population, settlements, economic activities, languages, religions, and political systems.

**CST 230-3 Comparative Non-Western World Views**
Examination of the world views of selected non-Western peoples and their varied expressions in literature and religion, emphasizing examples from Asia, Africa, Latin America, and the Middle East. Titles vary.

**CST 240-3 Comparative Non-Western Cultures**
Introduction to the cultural diversity and uniqueness of selected areas of Asia, Africa, Latin America, and the Middle East as reflected in their cultural systems or in particular cultural manifestations such as the arts. Titles vary.

**CST 250-3 Comparative Non-Western Social Systems**
Examination of political processes and economic systems in Asia, Africa, Latin America, and the Middle East with special attention to contemporary issues. Titles vary.

**CSE 250-3 Comparative Non-Western Economic Systems**
Examination of political processes and economic systems in Asia, Africa, Latin America, and the Middle East with special attention to contemporary issues. Titles vary.

**Computer Engineering/CEG**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

**210-4 PC Networking I**
Introduction to PC networking hardware, concepts, and technologies. Focus is on LAN administration, and hardware and software configuration using in class hands-on exercises. Internet resources, from the PC network perspective, are utilized. CS and CEG majors may not take this course for credit. Prerequisite: CS 205.

**211-4 PC Networking II**
Focuses on server installation, administration, multiple protocol integration, systems maintenance, and troubleshooting. Includes hands-on class and laboratory assignments. CS and CEG majors may not take this course for credit. Prerequisite: CEG 210.

**220-4 C Programming for Engineers**
Introduction to digital computers and computer programming with C language. Algorithms and
221-4 Advanced C Programming for Engineers
Study and usage of the C programming language beyond what is taught in the introductory course, CEG 220, in the solution of engineering-oriented problems. Prerequisite: CEG 220.

255-4 Introduction to the Design of Information Technology Systems
Introduction to the design of information systems comprising modern technologies such as SQL, database programming, networks, and distributed computing with CORBA, electronic and hypertext (HTML) documents, and multimedia. Prerequisite: CEG 220.

260-4 Digital Computer Hardware/Switching Circuits
(Also listed as EE 260.) 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 or 240 or CEG 220 or EGR 153.

305-4 Fundamentals of Expert Systems
Definitions of AI, discussion of the different technologies that comprise the field, introduction to the fundamental concepts and methodologies of expert systems, and hands-on experience developing small expert system applications. Prerequisite: CS 141 or CEG 220 or EGR 153.

320-4 Computer Organization and Assembly Language Programming
Terminology and understanding of functional organizations and sequential operation of a digital computer. Program structure, and machine and assembly language topics including addressing, stacks, argument passing, arithmetic operations, traps, and input/output. Macros, modularization, linkers, and debuggers are used. 3 hours lecture, 2 hours lab. Prerequisite: CEG 260, CS 242.

330-4 Object-Oriented Programming in C++
Introduction to the object-oriented programming and the C++ language. Topics include functions, pointers, structures, classes, function/operator overloading, inheritance and virtual functions, template, exceptions, and file input and output. Prerequisite: CEG 220, or CS 240, or equivalent.

360-4 Digital Systems Design
(Also listed as EE 451.) Topics include flip-flops, registers, counters, programmable logic devices, memory devices, register-level design, and microcomputer system organization. Students must show competency in the design of digital systems. 3 hours lecture, 2 hours lab. Prerequisite: CEG 260.

402-4 Introduction to Computer Communication Design
Survey of modern digital communications techniques. 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, and networks and their analyses. Students must design both hardware and software components of computer communications systems. 3 hours lecture, 2 hours lab. Prerequisite: CS 400.

411-4 Microprocessor-based System Design
Introduction to the design and development of software and computer-interfacing hardware for effective use of microprocessors in process control, data collecting, and other special-purpose computing systems. Software topics include assembly language programming, input/output, interrupts, direct memory access, and timing problems. For nonmajors only. Prerequisite: CEG 260/EE 260, EE 301, and 302.

416-4 Matrix Computations
(Also listed as MTH 416.) Survey of numerical methods in linear algebra emphasizing practice with high-level computer tools. Topics include Gaussian elimination, LU decomposition, numerical eigenvalue problems, QR factorization, least squares, singular value decompositions, and iterative methods. Prerequisite: MTH 253 or 355; and CS 142 or 241.

419-4 Introduction to Fuzzy Logic Control
(Also listed as EE 419.) Foundations and philosophy of fuzzy logic and applications to control theory. Relationship between classical PID control and fuzzy rule-based control. Techniques for rule construction and adaptive fuzzy logic controllers. Case studies of applications. 3 hours lecture, 2 hours lab. Prerequisite: EE 413, 414.

421-4 Microcomputer Design Projects
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 320, 360.

425-4 VHDL Hardware Description Language (VHDL)
VHDL is an industry-standard language used to describe hardware from the abstract to the concrete level. VHDL is rapidly being embraced as the universal communication medium of design. Prerequisite: CEG 360 and CS 400.

428-4 Linear Optical Systems for Computer Engineers
Introduction to linear optical systems, transformation properties of optical systems, correlation, convolution, diffraction, applications...
433-4 Operating Systems
Management of resources in multiuser computer systems. Emphasizes problems of file-system design, process scheduling, memory allocation, protection, and tools needed for solutions. Course projects use C/C++ language and include designing portions of an operating system. Prerequisite: CEG 320, CS 400.

434-4 Concurrent Software Design
Classical problems of synchronization and concurrency and their solutions are examined through course projects and through readings on operating-system design. Prerequisite: CEG 433.

435-4 Distributed Computing and Systems
Study of process coordination, client-server computing, network and distributed operating systems, network and distributed file systems, concurrency control, recovery of distributed transactions, and fault-tolerant computing. Prerequisite: CEG 434 or equivalent.

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 320, 360.

454-4 VLSI Design
(Also listed as EE 454.) Introduction to VLSI system design. Topics include CMOS devices and circuit design techniques, basic building blocks for CMOS design, fabrication processing and design rules, chip planning and layout, system timing and power dissipation, simulation for VLSI design, and signal processing with VLSI. Prerequisite: EE 431, 432, 451/CEG 360.

456-4 Introduction to Robotics
(Also listed as EE 456, ME 456.) An introduction to the mathematics, programming, and control of robots. Topics include coordinate systems and transformations, manipulator kinematics and inverse kinematics, trajectory planning, Jacobians, and control. Prerequisite: Senior standing and MTH 253; proficiency in Pascal, C, or FORTRAN programming.

458-4 Digital Integrated Circuit Design with PLDs and FPGAs
(Also listed as EE 458.) Design and application of digital integrated circuits using programmable logic devices (PLDs) and field programmable gate arrays (FPGAs). A commercial set of CAD tools (Mentor Graphics and Xilinx) will be used in the laboratory portion of the course. Prerequisite: CEG 360 or EE 451.

459-4 Integrated Circuit Design Synthesis with VHDL
(Also listed as EE 459.) Application of VHDL hardware description language (VHDL) to the design, analysis, multi-level simulation and synthesis of digital integrated circuits. A commercial tool (Mentor Graphics) will be used in the laboratory portion of the course. Prerequisite: CEG 220, C programming or equivalent and CEG 260.

460-4 Introduction to Software Engineering
Concepts of software engineering. Analysis, design, and implementation of software engineering concepts that comprise structured programming and design. Case studies serve as examples illustrating the software life-cycle model. 3 hours lecture, 2 hours lab. Prerequisite: CS 400.

461-4 Object-Oriented Programming & Design
Study of object-oriented design and programming. Programming topics emphasize the core concepts of encapsulation, inheritance, polymorphism, and dynamic binding. Additional topics include class organization, software maintenance, and design of reusable components. Prerequisite: CEG 460.

463-4 Personal Software Development Process
Discusses software development as it relates to the individual, software process measurement, design and code reviews, software quality measurement, design, and design verification. Each student will participate in the development of a software project. 3 hours lecture, 2 hours lab. Prerequisite: CEG 460 or equivalent.

465-4 Interactive Systems Modeling, Analysis, and Design
(Also listed as HF E 465.) Provide students experience in interactive real-time simulation, design, implementation, and evaluation of interfaces to simulations. The relevant topics are explored through application in supervisory control of complex, dynamic systems. Prerequisite: CEG 220 or any one of the following: CEG 221, CS 241, 242 or instructor permission.

468-4 Managing the Software Development Process
Discusses software development processes, models, and techniques necessary to successfully develop large-scale software. Discusses the Capability Maturity Model (CMM). Each student will participate in the development of a software project. 3 hours lecture, 2 hours lab. Prerequisite: CEG 460.

476-4 Computer Graphics I
(Also listed as MTH 476.) The principles of design, use, and understanding of computer graphics systems. Covers basic drawing techniques, line and polygon clipping, two-dimensional and three-dimensional transformations, segmentation, projections, and three-dimensional viewing. Graphics standards (GKS and PHIGS).
and hardware are discussed. Each student will create a menu-driven, interactive graphics package capable of generalized three-dimensional viewing. Prerequisite: CS 400, MTH 253 or 255.

477-4 Computer Graphics II
(Also listed as 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. 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.

478-3 Coding Theory
(Also listed as MTH 456, EE 478.) Introduction to the essentials of error-correcting codes and the study of methods for efficient and accurate transfer of information. Topics to be covered include basic concepts, perfect and related codes, cyclic codes, and BCH codes. Prerequisite: MTH 253 or MTH 355 (or equivalent).

498-4 Design Experience
A summative computer engineering design project, carried out either individually or in small groups, building upon previous engineering, science, mathematics, and communication coursework, focusing on professional practice in computer science and engineering. Prerequisite: Must complete a course in one of the four CEG elective packages.

499-1 to 5 Selected Topics
Topics vary. May be taken for letter grade or pass/unsatisfactory.

Computer Science/CS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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 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 on verification and testing of programs. 3 hours lecture, 2 hours lab. Prerequisite: CS 141.

205-4 Computer Literacy and Office Automation
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.

206-4 Computer Software Productivity Tools
Advanced use of application software to increase productivity. Covers advanced DOS and hard disk management, desktop publishing, presentation graphics, sharing data and files among different packages, spreadsheet macros, and dBase IV. CS and CEG majors may not take this course for credit. Prerequisite: CS 205 or waiver.

207-4 Advanced Office Productivity II
Emphasis is placed on understanding how packages interact within an integrated environment. Personal computers are used for sophisticated word processing and desktop publishing projects. State-of-the-art presentation techniques such as hypertext will be discussed. Prerequisite: CS 205 and 206, or equivalent work experience.

208-4 Computer Programming for Business with C-I
Introduces basic concepts of programming using the C programming language. Examples are from business applications and display graphics. Emphasis is on problem solving with the computer as a tool. Prerequisite: CS 205, MTH 129.

209-4 Computer Programming for Business with C-II
Continuation of CS 208. Introduces the basic concepts of programming using the C programming language. Examples are from business applications and display graphics. Emphasis is on problem solving with the computer as a tool. Prerequisite: CS 208.

214-4 Object Based Programming
An introductory course to the use of graphic objects in a windows event-driven environment providing a case study of object-oriented programming with Visual Basic in Microsoft Windows to develop simple graphic user interfaces. Need to be familiar with programming concepts.

225-4 Ada Programming
Introduction to computer programming with Ada language relative to the software engineering environment. CS and CEG majors may not take this course for credit. Prerequisite: CS 141 or equivalent.

240-4 Computer Science I
Basic concepts of programming and programming languages are introduced. Emphasis is on structured programming and stepwise refinement. For CS/CEG majors with familiarity of a high-level programming language. Corequisite: MTH 130 and 131; or MTH 134.

241-4 Computer Science II
A continuation of CS 240. The emphasis is on data abstraction and software engineering. For CS/CEG majors only. Prerequisite: CS 240. Corequisite: MTH 229.

242-4 Computer Science III
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; and case studies with business applications. 3 hours lecture, 2 hours lab. Prerequisite: for 300, CS 142 or 241; for 301, CS 300.

302-4 Client Server Databases
Relational client server database design and access techniques. Includes building database tables, writing SQL statements/programs, and developing user interfaces and reports for data retrieval using Internet. Not for credit for CS/CEG majors. Prerequisite: CS 141 or CS 208 and CEG 210.

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 142 or equivalent programming experience.

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 EGR 153 or CS 241 or CEG 220, MTH 231, 253, or 255; for 317: CS 316, MTH 233, 253 or 355.

340-1 Programming Language Workshop
Self-directed study in computer languages. Individual workshops are offered in significant languages such as JAVA, COBOL, PL/1, SNOBOL, LISP, SIMSCRIPT, and GPSS. May be taken for letter grade or pass/unsatisfactory. Prerequisite: CS 400.

399-1 to 5 Selected Topics
Selected topics in computer science. May be taken for letter grade or pass/unsatisfactory.

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 on high-level language software design. 3 hours lecture, 2 hours lab. Prerequisite: CS 242, MTH 253, 257.

405-4 Introduction to Data Base Management Systems
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. 3 hours lecture, 2 hours lab. Prerequisite: CS 400.

407-3 Optimization Techniques
(Also listed as MTH 407.) Concepts of minima and maxima; linear programming; simplex method, sensitivity, and duality; transportation and assignment problems; and dynamic programming. Prerequisite: MTH 233 and 253 or 255.

409-4 Principles of Artificial Intelligence
Problem-solving methods in artificial intelligence (AI) with emphasis on heuristic approaches. Topics include methods of representation, search, intelligent agents, planning, learning, natural language processing, logic, inference, robotics, and case-based reasoning. 3 hours lecture, 2 hours lab. Prerequisite: CS 400 and CS 340 (LISP) or LISP programming experience.

410-4 Theoretical Foundations of Computing
(Also listed as MTH 410.) Turing machines; recursive functions; equivalence of computing paradigms; Church-Turing thesis; undecidability; intractability. 3 hours lecture, 2 hours lab. Prerequisite: CS 466.

415-3 Social Implications of Computing
Examines the impact of computers and computing on society. Topics include privacy, dangers introduced by computers performing critical tasks, the effect of robots on the work force, the impact of computers on education, and the new legal issues introduced by computing.

419-3 Cryptography and Data Security
(Also listed as MTH 419.) Introduction to the mathematical principles of data security. Various developments in cryptography are discussed, including public-key encryption, digital signatures, the data encryption standard (DES), and key safeguarding schemes. Prerequisite: MTH 253 or 255.

458-3 Applied Graph Theory
(Also listed as MTH 458.) Introduction to methods, results, and algorithms from graph theory. Emphasis on graphs as mathematical models applicable to organizational and industrial situations. Prerequisite: MTH 231.

459-3 Combinatorial Tools for Computer Science
(Also listed as MTH 459.) Introduction to some of the mathematical tools needed for an understanding of computer programming. The topics covered are summations, elementary number theory, combinatorial identities, generating functions, and asymptotics. MTH 457 recommended. Prerequisite: MTH 280.

466-4 Introduction to Formal Languages
Introduction to the theory of formal languages and automata. 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.
**Course Descriptions**

*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. 3 hours lecture, 2 hours lab. Prerequisite: CS 400 and STT 360 or STT 363.

*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 466, 480.

*482-4 Scanning, Parsing, and Semantic Analysis*
Study and use of tools for performing lexical, syntactic, and semantic analysis of computer-oriented languages. Prerequisite: CS 466, 480.

*499-1 to 5 Selected Topics*
Selected topics in computer science. May be taken for letter grade or pass/unsatisfactory, at instructor’s option.

**Cooperative Education/CPE**

*Note:* See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

*001-0 Cooperative Education*
Participation in field experience program.

*091-0, 092-0 Cooperative Education I, II*
University-sponsored learning experience in a work setting related to students’ academic or career interests. Approved learning objectives, oral and/or written reports, employer evaluation, and final conference with cooperative coordinator are required.

**Counseling/CNL**

*Note: *See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

*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.

*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.

*467-4 Group Background and Theory*
Surveys the background, theory, patterns of function, technique of facilitating, and use of small groups in counseling. Prerequisite: CNL 461, RHB 407.

*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. Titles vary. Graded pass/unsatisfactory.

**Dance/DAN**

*Note: *See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

*101-3, 102-3, 103-3 Ballet I*
Introduction to vocabulary, techniques, and theories of ballet. Emphasis on body alignment and effective methods for gaining strength and flexibility necessary for proper ballet training.

*104-2 Beginning Ballet for Musical Theatre*
This beginning level of ballet is geared to the dance needs of students preparing for careers in musical theatre.

*105-2 Beginning Ballet for Musical Theatre*
This beginning level of ballet is geared to the dance needs of students preparing for careers in musical theatre.

*106-2 Beginning Ballet for Musical Theatre*
This beginning level of ballet is geared to the dance needs of students preparing for careers in musical theatre.

*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.

*121-1, 122-1, 123-1 Beginning Jazz for Musical Theatre*
Emphasis on various traditional and contemporary jazz techniques and styles within the realm of musical theatre.

*131-2, 132-2, 133-2 Intermediate Jazz I*
First-year intermediate work in jazz dance technique. Emphasis is on technical proficiency and versatility through staccato and lyrical movements. Focus on musicality and individual artistry. Prerequisite: for 131, DAN 111 or permission of department; for 132, DAN 131 or permission of department; for 133, DAN 132 or permission of department.

*201-3, 202-3, 203-3 Ballet II*
Development of the vocabulary, techniques, and theory of ballet. Emphasis on body alignment and flexibility. Prerequisite: for 201, DAN 103; for 202, DAN 201; for 203, DAN 202.
207-1, 208-1, 209-1 Beginning Tap Dance
Beginning level of tap dance introduces students with no previous experience to the fundamental movements and rhythmic structures of the form.

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. Prerequisite: for 211, DAN 113.

214-2, 215-2, 216-2 Modern Dance for Actors
Fundamentals of modern dance. Emphasis on skeletal alignment, breathing, relaxation, and the use of dynamics and rhythm in space. Prerequisite: for 214, DAN 113; for 215, DAN 214; for 216, DAN 215.

231-2, 232-2, 233-2 Intermediate Jazz II
Second-year intermediate work in jazz dance technique. Emphasis on varied allegro and adagio jazz movements. Focus will be on technical diversity, musicality, artistry, and performance. Prerequisite: for 231, DAN 133; for 232, DAN 231; for 233, DAN 232.

251-1, 252-1, 253-1 Dance History
Survey of Western theatrical dance from its roots in early cultures to the twentieth century. 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 on body alignment and flexibility. Prerequisite: for 301, DAN 203; for 302, DAN 301; for 303, DAN 302.

304-2, 305-2, 306-2 Intermediate Ballet for the Musical Theatre
Intermediate level of ballet is geared to the dance needs of students preparing for careers in musical theatre. Emphasis on strong technique which can be applied to theatre dance needs.

307-1, 308-1, 309-1 Intermediate Tap Dance
Intermediate level tap dance develops a more complex understanding of rhythmic structures in traditional and contemporary approaches to tap technique and choreography.

311-3, 312-3, 313-3 Modern Dance III
Further study of modern dance techniques and styles. Material is on the intermediate to advanced level. Prerequisite: for 311, DAN 213.

321-2, 322-2, 323-2 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. Prerequisite: for 321, DAN 213; for 322, DAN 321; for 323, DAN 322.

331-3, 332-3, 333-3 Musical Theatre Dance Styles
Diversified styles and techniques of contemporary musical theatre dancing. Emphasis is on movement proficiency and versatility within the realm of jazz and theatre dance.

341-1 Improvisation
Exploration of improvisation techniques as a compositional tool. For dance majors only. Prerequisite: DAN 213.

342-1, 343-1 Choreography
Exploration of compositional techniques culminating in the creation of solos and ensemble works. For dance majors only. 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. For dance majors only. Prerequisite: for 371, DAN 252; for 372, DAN 371; for 373, DAN 372.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of dance. Topics vary.

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. Prerequisite: for 401, DAN 303; for 402, DAN 401; for 403, DAN 402; or departmental approval.

411-3, 412-3, 413-3 Modern Dance IV
Advanced work in modern dance techniques and styles. Prerequisite: for 411, DAN 313.

421-2, 422-2, 423-2 Jazz/Theatre Dance II
Diversified styles and techniques of contemporary musical theatre dancing including jazz adagio and allegro combinations, focusing on technique, musicality, style, and performance. Prerequisite: for 421, DAN 323; for 422, DAN 421; for 423, DAN 422.

431-1 Pointe Class
Emphasizes pointe work for the female dancer, to develop strength on pointe for classical ballet. Prerequisite: DAN 203.

432-1 Men's Ballet Class
Specific movements and exercises geared to the male dancer, to develop strength and virtuosity. Prerequisite: DAN 203.

433-1 Pas de Deux Class
Trains male and female dancers in the art of partnering, an essential part of all dance. Prerequisite: DAN 203.

491-1, 492-1, 493-1 Senior Dance Project
Advanced work for dance majors in creative projects and/or dance research. Prerequisite: for 491, DAN 343; for 492, DAN 491; for 493, DAN 492; or departmental approval.
Danish/DN

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

111-4 Essentials of Danish
Introduction to Danish with an emphasis on speaking the language.

Developmental Education/DEV

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

071-5 Reading Improvement I
To help severely underprepared students acquire the skills and confidence necessary to reduce the passive chore aspects of reading in order to stimulate an enthusiasm for learning in general. Graded pass/unsatisfactory. (Previously listed as SS 071.)

072-6 Basic Writing Skills I
 Provides intensive instruction for students whose writing skills are significantly below those necessary for success in university-level writing requirements. Graded pass/unsatisfactory. (Previously listed as SS 072.)

073-5 Basic Mathematics I
Provides instruction in basic mathematical concepts and computations necessary for students to successfully perform mathematical functions that occur in daily life and to complete the Level II course, SS 083. Graded pass/unsatisfactory. (Previously listed as SS 073.)

081-5 Reading Improvement II
To help students acquire skills necessary to comprehend a tenth grade textbook; to find the main idea, recognize sentence patterns, deduce meaning of words, and to complete an outside reading assignment. Graded pass/unsatisfactory. (Previously listed as SS 081.)

082-6 Basic Writing Skills II
To provide learning activities enabling students to brainstorm for ideas; develop and organize their writing; revise; edit for grammar, sentence structure, and mechanics; and prepare standard, acceptable final drafts of their writing. Graded pass/unsatisfactory. (Previously listed as SS 082.)

083-5 Basic Mathematics II
Reinforces basic mathematical concepts and computations. Provides instruction in pre-algebra and elementary algebra skills and concepts necessary for students to successfully complete elementary algebra. Graded pass/unsatisfactory. (Previously listed as SS 083.)

091-3 Reading Improvement III
Reading and study skills essential for college, emphasizing comprehension, vocabulary, textbook organization, marking, note-taking techniques, and rate improvement. Graded pass/unsatisfactory. (Previously listed as SS 091.)

092-4 Fundamental English Skills
Prepares students for success in English 101 by giving them instruction and activities in the fundamentals of the writing process. Graded pass/unsatisfactory. (Previously listed as SS 092.)

093-3 Basic Math Skills III
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. Graded pass/unsatisfactory. (Previously listed as SS 093.)

Economics/EC

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

200-3 Economic Life
Introduction to basic economic concepts such as resource allocation, costs, supply, demand, and public goods. Topics include American capitalism, market failures, unemployment, inflation, and taxation. The sequence EC 201, 202, 203 may be substituted. Credit will not be given for EC 200, Economic Life for students who successfully complete EC 201, 202, and 203.

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. Prerequisite: EC 200 or 201.

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. Examines the production process and the operation of market mechanisms. Policy implications are emphasized. Prerequisite: Junior standing, EC 201, 202, 203, and MTH 228 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. This is a writing-intensive course. Prerequisite: Junior standing, EC 201, 202, 203 and MTH 228 or permission of instructor.

319-4 Institutional Economics
Focuses on interrelationships between market and nonmarket forces, exploring contemporary social, technological, political, and other influences on resource allocation decisions and on economic change. This is a writing-intensive course. Prerequisite: EC 201, 202, 203 or permission of instructor.

320-3 The Global Economy
Explores how the global economic environment affects business decisions and how these decisions affect the economy of host and source countries. Analyzes the impact of international trade, foreign direct investment, and global monetary systems. Prerequisite: EC 201, 202, 203 or permission of instructor.

321-3 Economic History
Analysis of economic, political, social, and cultural changes resulting from industrial advancements and the control over industrial changes exercised by different societies. Prerequisite: EC 200 or EC 201, 202, 203.

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. Prerequisite: EC 200 or EC 201, 202, 203 or permission of instructor.

328-3 Socialist and Radical Economics
Development of Marxian, socialist, and radical economic doctrines with emphasis on contemporary ideas and trends. Prerequisite: EC 200 or EC 201, 202, 203, or permission of instructor.

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. Prerequisite: EC 200 or EC 201, 202, 203, or permission of instructor.

340-3 International Economic Relations
Covers the complexities, prospects, and consequences of international flow of goods, services, technology, and capital across countries with a diverse range of economic, social, and political institutions. Prerequisite: EC 200 or EC 201, 202, 203 or permission of instructor.

351-3 Labor Markets
A study of labor market behavior and wage determination, addressing the impact of new technologies, global competition, and deindustrialization on American labor markets. Prerequisite: EC 201, 202, 203 or permission of instructor.

352-3 Labor History and Legislation
History of the American labor movement from the early national period to the present, including labor legislation, public policy, and current labor issues. Prerequisite: EC 201, 202, 203 or permission of instructor.

370-3 Environmental Economics
Analysis of environmental quality from both microeconomic and systems frameworks. Emphasis on effectiveness of alternative approaches to environmental problems, including specific solutions to particular problems and general approaches to broad problems. Prerequisite: EC 200 or EC 201, 202 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.

409-3 Applied Econometrics
Application of statistics and economic theory to measurement, forecasting, and other economic problems. Prerequisite: Junior standing, EC 201, 202, 203, MS 202, and MTH 228.

410-3 Mathematical Economics
Application of mathematical tools in the formulation of economic theory. Methods used in model construction. Completion of a college algebra course required. Prerequisite: EC 201, 202, 203.

412-3 Forecasting Economic Activities
Techniques and theories used in forecasting. Practical methods and problems are stressed. Prerequisite: Junior standing, EC 201, 202, 203, MS 201 or equivalent, and MTH 228.

425-3 Development of Economic Thought
Historical development of economic thought and philosophies. Prerequisite: EC 201, 202, 203 or permission of instructor.

431-3 Federal Finance and the Economy
Develops a theoretical framework and working knowledge of the economic basis for government activity, government expenditures, programs, and policies, and the financing of government expenditures through taxation. Prerequisite: EC 201, 202, 203 or permission of instructor.

432-3 State and Local Finance and the Economy
Analysis of state and local government public service responsibilities, programs, and policies, including expenditures and taxation. Prerequisite: EC 201, 202, 203 or permission of instructor.
435-3 Comparative Economic Systems
Comparison of institutions of various capitalist and socialist economies including economies in transition. Comparative analysis provides a basis for evaluating government policy. Prerequisite: EC 201, 202, 203 or permission of instructor.

436-3 Industrial Organization
Analysis of business behavior under various industry structures and government policies. Emphasis on actual case studies. 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, inter-regional trade, regional development, urban regions, and growth strategies. Prerequisite: EC 201, 202, 203 or EC 330; or permission of instructor.

441-3 International Trade and the Economy
Economic reasons for international trade. Impact of trade and its 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. Focuses on institutions and arrangements used to finance international trade. Topics 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
Explores theories of economic development and underdevelopment and their relationship to poverty. Develops strategies for reducing world poverty from different perspectives. Prerequisite: EC 201, 202, 203 or permission of instructor.

445-3 Political Economy of Women
Examines the changing role of women in the American economy from colonial times to the present, from a multicultural perspective. The combined effects of race, class, ethnicity, gender ideology, technology, education, unionism, legislation, etc., on women's evolving labor market status are investigated. Junior or senior standing required. Prerequisite: EC 201, 202, 203, or EC 200 with permission of instructor.

477-3 Economic Studies
Examination of special economic issues.

478-3 Honors: Independent Study in Economics
Research in economics for fulfillment of the Honors Program project requirement.

480-3 Economic Issues
Examination of selected economic issues with a view to integrating the discipline. Topics vary. For economics majors or permission of instructor.

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.

Education/ED

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-1 to 2 Interpersonal Process Learning Laboratory
Explores such areas as listening, communicating, life planning, sexuality, and the helping relationship with emphasis on interpersonal process.

120-1 Teaching as a Career
Designed for prospective teacher candidates to explore teaching as a career choice. Includes an elementary/secondary field placement. Graded pass/unsatisfactory.

214-3 Introduction to Education
Provides an introduction to the teaching profession and the opportunity to examine beliefs, motives, values, and behaviors as they relate to the self as a teacher. Emphasis on philosophical, social, and psychological foundations. Corequisite: ED 216, 221.

216-3 Cultural Diversity: Schools and Society
Introduces the make-up of the culturally diverse schools: racial, religious, economic, social, intellectual, physical, age, and sex differences; focuses on implications for education. Corequisite: ED 214, 221.

218-3 Learning Theories and Problem Solving
Introduction to cognitive, affective, and psychomotor domains of learning, problem-solving models, and associated learning theories as applied to teaching. Prerequisite: ED 214, 216, 221. Corequisite: ED 220, 223.

220-3 Development of the School-Age Student
Introduction of basic developmental principles; examination of various stages of development; implications for education; and review of special topics and issues of importance to educators. Graded pass/fail. Prerequisite: ED 214, 216, 221. Corequisite: ED 218, 223.

221-1 Practicum Experience I
Field practicum introduces students to the educational process through participation in a classroom and through an examination of dynamics of the classroom and its setting. Graded pass/unsatisfactory. Corequisite: ED 301, 303.

223-1 Practicum Experience II
Field practicum introduces students to the educational process through participation in a classroom and through an examination of dynamics of the classroom and its setting. Prerequisite: ED 214, 216, 221. Corequisite: EDS 333.
Course Descriptions

225-1 Practicum Experience III
Field experience in which students apply knowledge of infant, toddler development, family, and community resources to examine issues that affect the educational system. Prerequisite: Successful completion of the first quarter of Phase I.

227-1 Practicum Experience IV
Field experience in which students apply knowledge of constructive behavior, positive discipline, authentic and naturalistic assessment and evaluation to examine issues that affect the educational system. Prerequisite: Successful completion of the first quarter of Phase I.

301-5 Teaching in a Culturally Diverse Society
Designed to provide professional educators an orientation to the teaching profession and pluralistic American society as well as an awareness of the total global community. Prerequisite: Sophomore status.

302-2 Classroom Management
Introduction of four discipline models; implication for classroom applications; legal concerns in discipline; and discussion of recent research, practice, and innovation in the area. Completion of Phase I program required. Corequisite: ED 327.

303-5 Introduction to Psychological and Sociological Foundations of Education
Cognitive, affective, and psychomotor domains of learning, basic principles and stages of child and adolescent development, and special topics within the social contexts education. The role of research in supporting educational practice. Prerequisite: ED 301 and EDS 333.

311-4 Early Childhood School Science: Philosophy, Curriculum, and Materials
Philosophy, curriculum, and materials for teaching early childhood school science with an emphasis on planning and implementation, evaluation, resources and facilities, and current and historical curricular trends in early childhood school science. Field/clinical experiences.

315-3 Early Childhood 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 early childhood. Field/clinical experiences required. Prerequisite: ED 301, ED 303, EDE 315, and EDE 230.

316-3 Early Childhood Language Arts: Curriculum and Materials
Language and communication in early childhood, including practices and materials used in teaching oral and written communication. Field/clinical experiences required. Prerequisite: ED 301, ED 303, EDE 315, and EDE 230. Corequisite: ED 315.

317-3 Early Childhood Reading: Curriculum and Materials
Introductory course in reading instruction. Students will be expected to become aware of the complexity of the reading process and to learn materials and procedures for teaching reading at the early childhood level. Prerequisite: ED 301, ED 303, EDE 315, and EDE 230. Pre- or corequisite: ED 315 and 316.

321-1 Practicum Experience III
Third field/clinical practicum where students implement teaching strategies introduced in the Phase II methods components. Involvement with human service agencies and families occurs. Prerequisite: Completion of Phase I and registration in Phase II required. Corequisite: ED 302.

323-1 Practicum Experience IV
Fourth field/clinical practicum where students implement teaching strategies introduced in the Phase II methods components. Involvement with human service agencies and families occurs. Prerequisite: Permission of the Phase II coordinator required. Corequisite: ED 316 for elementary education majors and the designated special methods course for secondary majors.

327-3 Teaching Skills
Introduces students to the basic skills of lesson planning and presentation. Students use motivational techniques, questioning skills, alternative teaching strategies, and varied advanced technologies, to design/deliver instructional plans. Lab fee required. Prerequisite: ED 301, 303, 221, and 223, or equivalent.

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.

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
In-depth independent study under the guidance of a faculty advisor.

411-4 Early Childhood Mathematics: Philosophy, Curriculum, and Materials
Introduces prospective early childhood teachers to mathematics education. Problem solving, use of manipulatives, and classroom technologies will be studied. Prerequisite: MTH 244.

417-3 to 4 Early Childhood Social Studies: Curriculum and Materials
Objectives, principles, and trends of social studies in early childhood. Completion of two-thirds of major content field is required. Prerequisite: ED 301, 303, EDE 315, 320 or equivalent.

418-3 to 4 Problem Solving in School Mathematics
Designed to prepare teachers of mathematics K–8 to teach problem solving as a basic mathematical
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skill. Emphasis on the teaching/learning of a variety of problem-solving heuristics; applying problem-solving strategies, and using both routine and nonroutine problems in school mathematics. Prerequisite: ED 214, 216, 218, 220 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 school and continues for approximately fourteen weeks to the end of fall quarter. During 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. Students may receive 12 credit hours for student teaching in the fall and 10 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 440 and permission of director of Laboratory Experiences required. Student teaching and ED 440 constitute a full load for the quarter. No other course work may be taken. Completion of 126 credit hours (at least 12 of which must have been taken at Wright State) involvement in participation experiences, achievement of the currently required cumulative grade point average, and completion of appropriate Phase II courses or equivalent with grades of C or above required. In addition, students in special education must also complete appropriate special education courses with a grade of C or above. Students seeking kindergarten certification must also complete either EDE 411 or 412 or 414 with a grade of C or above.

420-2 to 4 Studies in English Education
(Also listed as ENG 485.) Focuses on theoretical issues and practical problems of teaching English at all levels, including the teaching of writing and the teaching of English to speakers of other languages (TESOL).

421-3 Literature for Middle Childhood
Knowledge of a wide range of literature for middle childhood including the selection criteria and the rationale for classroom practices with children's literature. Prerequisite: ENG 101, 102, COM 103.

422-1 to 3 Student Teaching Seminar
An elective seminar discussion of problems and concerns encountered during student teaching to bring professional theory and practice into working perspective. Corequisite: ED 419 and/or 429.

423-3 Secondary School English: Curriculum and Materials
Curriculum, methods, and materials for language arts in the secondary school; current trends in teaching English. Completion of two-thirds of major content field is required. Prerequisite: ED 214, 216, 218, 220 or equivalent. Corequisite: ED 323.

424-3 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. Completion of two-thirds of major content field is required. Prerequisite: ED 214, 216, 218, 220 or equivalent. Corequisite: ED 323.

425-3 Modern Foreign Languages: Curriculum and Materials
Modern language curriculum in public schools; purposes; methods; and materials. Completion of a 200-level language course or permission of instructor required. Completion of two-thirds of major content field is required. Prerequisite: ED 214, 216, 218, 220 or equivalent. Corequisite: ED 323.

427-3 French and Spanish Children's Literature, Music, and Art
Participants will become knowledgeable about French and Spanish children's literature, music, and art (in original language or translation) to enhance teaching in the early childhood, pre-K–8 school classrooms.

429-4 to 15 Supervised Teaching: Multi-age
Supervised full-time student teaching in a pre-K–12, multi-age school setting. Corequisite: Concurrent enrollment in ED 440 is required.

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. Completion of two-thirds of major content is required. Prerequisite: ED 214, 216, 218, 220 or equivalent. Corequisite: ED 327.

432-3 Improving Reading in the Secondary School
Techniques of diagnosing and correcting reading problems of secondary students. Explores secondary reading problems with emphasis on skill development. Prerequisite: ED 214, 216, 218, 220 or equivalent. Pre- or 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 on structural properties of number and numeration system studies at this level. Completion of two-thirds of major content field is required. Prerequisite: MTH 243 and ED 214, 216, 218, 220 or equivalent. Pre- or corequisite: ED 327.
438-3 Secondary School Mathematics: Curriculum and Materials
   Curriculum, methods, and materials in the mathematics of grades 7-12. Completion of two-thirds of major content field is required.
   Prerequisite: ED 214, 216, 218, 220 or equivalent.
   Corequisite: ED 323.

439-3 to 4 Secondary School Social Studies: Curriculum and Materials
   Objectives, principles, and trends in secondary social studies education. Completion of two-thirds of major content field is required. Prerequisite: ED 214, 216, 218, 220 or equivalent.

440-1 to 4 The Teacher in School and Society
   An exit seminar preparing the student to enter the profession via consideration of societal issues affecting education and personal readiness through individual development of a product portfolio. Graded Pass/Fail. Corequisite: ED 419 and/or 429.

448-3 Improvement of Social Studies Instruction
   In-depth analysis of new social studies resource materials and curriculum models with emphasis on improving instruction. Prerequisite: For elementary, ED 417; for secondary, ED 439.

458-1 to 9 Practicum in Education
   Supervised teaching experience for students who have completed student teaching (or its equivalent) and are seeking certification in another field. Topics vary.

460-1 to 4 Practicum in English Education
   Students are assigned to an instructional class that focuses on the teaching of English to speakers of other languages (TESOL) for a supervised practicum experience. Graded Pass/unsatisfactory. Prerequisite: ED 420.

464-3 to 4 Evaluation
   Evaluation of learning including selected forms of measurement and interpretation of data: sociometric techniques, anecdotal records, and testing. Prerequisite: ED 214, 216, 218, 220 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 in-service teachers, administrators, and curriculum supervisors. Topics vary.

Educational Leadership/EDL

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

410-1 to 4 Paraprofessional Staff Training
   Provides an orientation to the university for new Residence Services paraprofessionals to prepare them to be effective in their roles. Participants are exposed to the various student services available on campus as well as aspects of student development, the mission of the university, Residence Services, and New Student Orientation. Topics vary. May be taken for letter grade or pass/unsatisfactory.

411-1 to 4 Student Development for Residence Life Programs
   Provides an overview of various student development concepts and functions within a residential setting. Focuses on knowledge and skills specifically for paraprofessional staff. Topics include community development, multiculturalism, peer counseling, interpersonal communication, conflict mediation and resolution, developmental programming, and developmental discipline. Topics vary. May be taken for letter grade or pass/unsatisfactory.

Educational Technology/EDT

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

110-1 The Electronic Library
   Prepares students to take advantage of the latest electronic information technology to efficiently find, evaluate, and use information resources available in electronic or traditional formats. Titles vary.

204-2 PC Operating Systems for Educators
   Strategies and techniques for teaching and using PC operating systems software to enhance productivity in practical classroom-related applications.

205-2 Word Processing for Educators
   Word processing fundamentals and terminology. Activities designed for the classroom include Internet resources for teachers and basic web page design.

206-2 Integrated Database Applications for Educators
   Emphasizes the creation of database structures, manipulation of records, and the generation of reports for the classroom and educational administration.

207-2 Integrated Spreadsheet Applications for Educators
   Provides an understanding of the major features of a popular electronic spreadsheet program in organizing, analyzing, and reporting data useful in teaching applications.

208-2 Presentation Graphics Software for Educators
   Creation of electronic presentations and instructional material for the classroom. Topics include Internet resources for educators and the basics of web page creation and design.
209-2 The Internet: Applications for Educators
Internet tools and resources are explored in navigating the superhighway to research and retrieve information of practical value in classroom applications and professional development.

280-3 Classroom Applications of Computer-Based Technology
Instruction to the use of computer-based technology in K-12 instruction. Focus is on selecting courseware and integrating it into lessons.

306-3 Office and Records Management Systems
Procedures for controlling both paper and electronic business records and the analysis of the records cycle, retention programs, storage and retrieval processes and systems, and electronic imaging in records management. (Previously listed as OA 306.)

335-3 Business Mathematics for Business and Marketing Teachers
Designed for business and marketing education majors to review, demonstrate, and develop strategies in teaching math fundamentals and consumer math.

370-1 to 4 Independent Study
Student pursues an individualized course of study under the close supervision of a faculty member. It may include extensive readings, a research project, a paper, or a production. May be taken for letter grade or pass/unsatisfactory.

433-5 Curriculum and Materials: Accounting/Business and Marketing Education
Instructional strategies in using technology as a tool in teaching and learning. Topics include the role of state and professional guidelines in curriculum development. Completion of two-thirds of major content field required. Two hour lab per week required. Prerequisite: ED 301, 303 or equivalent. Corequisite: ED 323.

434-5 Curriculum and Materials: Office Procedures and Technology
Instructional strategies and trends in curriculum development as affected by current office technology, employer expectations, and state and professional guidelines. Field/clinical experiences required. 2 hours lab per week required. Prerequisite: EDT 212, 433.

435-3 Business Education Curriculum and Materials: Shorthand, Transcription, and Secretarial Procedures
Curriculum, methods, and materials in teaching shorthand, transcription, and secretarial procedures. Field/clinical experiences required. Completion of two-thirds of major content field is required. Pre- or corequisite: OA 203, 213. Corequisite: ED 327.

436-2 Production of Instructional Materials
A nontechnical course with emphasis on production of locally made materials for classroom use including mounting, lettering, computer graphics, and transparency production.

440-3 Topics in Office Administration
Emphasizes effective leadership and human relations skills in office administration. Topics include an analysis of the effects of technology and global and multicultural influences on the office and its workforce.

455-4 Television Production
Survey of television production from a single-camera, remote production perspective, including use of editing equipment.

463-3 Survey of Adolescent Literature
Study of books appropriate for students ages 12–21. Survey and evaluation of the literature, studies of reading interests, and issues related to this field of literature.

470-1 to 6 Workshop in Educational Technology
Intensive, practical study in a selected area of educational or applied technology. Titles vary.

485-3 Computers for Educators
Computer software and hardware systems and their uses are discussed with emphasis on their effects on education and the teacher.

487-4 Introduction to BASIC for Educators
Introduction to computer programming in the BASIC language including programs and techniques useful to educators. Topics include techniques for program design, flowcharting, coding, testing, and documentation.

491-1 to 12 Library/Media Practicum in the Elementary School
Supervised student teaching in an elementary public school library media center. Prerequisite: Certification requirements completed.

492-1 to 12 Library/Media Practicum in the Secondary School
Supervised student teaching in a secondary public school library media center. Prerequisite: Certification requirements completed.

Education—Early Childhood Education/EDE

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

230-3 Introduction to Early Childhood Education
History, models, issues affecting early childhood, state and federal involvement and regulations, development of professionals in programs for children birth to eight. Various approaches will be studied. Prerequisite: ED 301, 303, EDE 315, or concurrent enrollment. Field placement required.
231-4 Developmentally Appropriate Programming in Early Childhood: Infants and Toddlers
Introduction to appropriate environment, curriculum content, scheduling, developmental evaluation, teaching strategies, and group management in the early childhood classroom. Concurrent enrollment in ED 321 and field placement in K–P required. Prerequisite: ED 214, 216, 218, 220, EDE 230 or concurrent enrollment.

302-3 Constructive Guidance and Discipline in ECE
The study of guidance and discipline concepts within the framework of child development, developmentally appropriate practices, and constructivist education. Prerequisite: ED 301, 303, EDE 315.

303-3 Language Development, Social Development, and Play in ECE
The development of language and the relationship between the stages of language, social development, and play. Field experience required. Prerequisite: EDE 230.

309-4 Emerging Literacy in Early Childhood
Understanding language and literacy growth. Encouragement of interest in reading, designing and implementing readiness, and early literacy instruction, including pre-reading and pre-writing behaviors. Field placement required. Prerequisite: ED 214, 216, 218, 220 and EDE 230 or equivalent.

312-4 Math and Science in Early Childhood Education
Examination of the theoretical basis and appropriate content of math and science learning for young children. Field placement required. Prerequisite: ED 214, 216, 218, 220, and EDE 230.

315-3 Young Children with Special Needs
Causes and effects of various developmental disabilities, theories and legalities of early intervention services 0–8 years, service delivery models, family and agency involvement. Prerequisite: ED 301, ED 303 or concurrent enrollment.

317-3 Meeting the Individual Needs of Young Children
Practices and procedures used in developing individually appropriate activities for young children with developmental disabilities. Includes modification and adaptations, social and motor skills development as applied to development and implementation of the IFSP and IEP. Field/clinical experiences required. Prerequisite: ED 301, 303, EDE 315 or equivalent.

401-3 Families and Community in Early Childhood Education
Examines the role of the family in educating the young child, birth to 8. The effects of parental behaviors, family composition, and parental involvement will also be examined. Special emphasis will be placed on community agencies and their role in family decision-making and goal setting. Prerequisite: ED 301, 303, EDE 315, or equivalent, and EDE 230.

464-3 Evaluation and Assessment in Early Childhood Education
A study of alternative and more traditional means of assessment and evaluation of teaching and learning in the early childhood environment. Prerequisite: ED 301, 303, EDE 315, 203.

470-1 to 4 Early Childhood Curriculum and Instruction Workshop
Intensive practical study in a selected area of early education. May be taken for letter grade or pass/unsatisfactory.

Education-Special Education/EDS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

333-3 Learning Differences: Introduction
An introduction to the history, laws, terminology, and best practice for the education of students with mild to moderate, moderate to intensive, or gifted educational needs. Also covered are inclusive education practices. Corequisite: ED 223.

441-3 Mental Retardation and Developmental Disabilities
Causes and effects of mental retardation and related developmental disabilities in home, school, and community settings. Prerequisite: ED 214, 216, 218, 220.

442-4 Curriculum, Methods, and Materials for the Mildly Handicapped
Practices and procedures used in developing elementary and secondary curricula for the mildly handicapped. Includes academic adaptations and social and motor skills development as applied to development and implementation of the IEP. Prerequisite: ED 214, 216, 218, 220, EDS 455 or equivalent. Corequisite: ED 323.

443-3 Introduction to Augmentative Communication
Introduces etiology, problems, and needs of non-speaking individuals. Hands-on experiences are required using augmentative aids and devices with multiply handicapped individuals. Prerequisite: EDS 451 or experience with multiply handicapped individuals.

444-4 Instructional and Behavioral Management of Exceptional Individuals
Prepares special educators to meet the instructional and behavioral management demands particular to working with exceptional individuals, including those with severe behavior difficulties. Prerequisite: ED 302, EDS 451 or 455 (EDS 451 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; and methods and techniques used in developing occupational interests and abilities at various levels. Prerequisite: EDS 451 or 455 or RHB 301.

451-3 Nature and Needs of the Multiply Handicapped
Reviews etiological aspects; historical, educational, and training programs; and concerns and issues related to multiply handicapped individuals including mildly, moderately, severely, and profoundly retarded or physically handicapped. Prerequisite: ED 220.

452-3 Education of Individuals with Physical, Sensory, and Motor Disorders
Overview of the etiology and educational implications of physical disabilities, sensory deficits, and communication disorders. Emphasis on psycho-educational, physical, and medical needs of these individuals. Prerequisite: ED 220 or EDS 451 or permission of instructor.

453-3 Curriculum, Methods, Materials, and Adaptive Equipment for Multiply Handicapped
Reviews organizations, methods, materials, and techniques for educating and training multiply handicapped children, youth, and adults. Related professional organizations and community services are reviewed. Prerequisite: EDS 444, 451, 452. Corequisite: ED 323.

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. Pre- or corequisite: EDS 455.

455-2 to 4 Nature and Needs of the Mildly Handicapped
Causes and effects of specific learning and language disabilities, severe behavior disorders, and mild developmental disabilities. Study of teaching strategies appropriate for these individuals. Prerequisite: ED 218, 220.

456-4 Clinical Practice in Remediation
Supervised clinical practice in the diagnostic teaching of basic academic and social skills including learning and study strategies. Prerequisite: ED 317 or ED 432, 437, EDS 442, 454, 455. Non-special education majors do not need EDS 442 and 455.

459-3 Communication and Consultation Skills for Special Educators
Techniques of collaborative consultation needed to enhance communication with exceptional individuals, parents, and educational team members. Pre- or corequisite: EDS 451 or 455.

470-1 to 4 Workshop in Special Education
Intensive practical study in a selected area of special education. May be taken for letter grade or pass/unsatisfactory.

Electrical Engineering/EE

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

140-4 Principles of Electrical Engineering
Provides a practical introduction to important applications, and hands-on experience with components and assembly of electrical systems. Laboratory experience is emphasized.

250-2 Engineering Problem Solving with MATLAB
Provides engineering students an extensive hands-on experience of MATLAB. Topics include relational and logic operations, array manipulation, low-level I/O, graphics, and symbolic manipulations. Prerequisite: MTH 229.

260-4 Digital Computer Hardware/Switching Circuits
(Also listed as CEG 260.) Topics include switching algebra and switching functions, logic design of combinational and sequential circuits using TTL, combinational logic design with MSI and LSI, binary, storage elements, and instrumentation, 3 hours lecture, 2 hours lab. Prerequisite: CS 142, 240, CEG 220, or EGR 153.

301-4 Circuit Analysis I
Basic elements and laws, circuit analysis techniques and concepts, energy storage elements, first and second order circuits, sinusoidal steady state analysis. Prerequisite: MTH 233, PHY 242. Co- or postrequisite: EE 302.

302-1 Circuit Analysis I Laboratory
Computer-assisted analysis, RLC circuits, operational amplifiers and circuits, Thévenin and Norton equivalents, maximum power transfer, and AC networks. Pre- or corequisite: EE 301.

303-3 Circuit Analysis II
Circuit review, alternating current concepts, computer-aided circuit analysis, two-port networks, power. Prerequisite: EE 301 and 302. Co- or postrequisite: EE 304.

304-1 Circuit Analysis II Laboratory
Application of AC concepts, computer-aided circuit analysis, two-port networks, and power theory. Prerequisite: EE 301 and 302. Pre- or corequisite: EE 303.

321-4 Linear Systems I
Considers systems in a broad context including linear, nonlinear, variant, invariant, and analog and discrete. Various approaches to system and signal modeling are also discussed with emphasis on the Fourier transform technique. Prerequisite: EE 301, 302.
322-4 Linear Systems II
Discrete time signals and systems, the z-transform, input/output theory, discrete Fourier transform, IIR and FIR filter design, relationships, and sampling. Prerequisite: EE 321.

331-3 Electronic Devices
Introduction to basic solid-state electronic devices. Fundamentals necessary for comprehension and further study of modern engineering electronics. Major topics include carrier flow in semiconductors, p-n junction theory, semiconductor diodes, bipolar junction transistors, field effect transistors, biasing, and introduction to amplifiers. Prerequisite: EE 301, 302. Corequisite: EE 332.

332-1 Electronic Devices Laboratory
Applications of diodes and transistors in analog circuits, design of bias circuits. Prerequisite: EE 301, 302. Corequisite: EE 331.

345-4 Electromagnetics
Electrostatics and magnetism; induced electromagnetic force. Maxwell’s equations and their physical interpretation and application. Prerequisite: EE 301, 302, MTH 232.

346-4 Transmission Lines, Waveguides, and Radiating Systems
Plane waves in free space and matter. Transmission line equations and application of Smith chart. Wave propagation in rectangular waveguides. Introduction to radiating systems, including dipole and loop antennas. Rudimentary design of typical systems containing transmission lines, waveguides, and antennas. Prerequisite: EE 345.

401-3 Electronic Circuits and Devices
Application of modern electronics to instrumentation and data collection. Topics include semiconductor devices, small signal and power amplifiers, operational amplifiers, power supplies, digital fundamentals, and microprocessors. For nonmajors. Prerequisite: EE 301, 302. Corequisite: EE 402.

402-2 Electronic Circuits and Devices Laboratory
Experiments in simple circuits, diode and transistor circuits, operational amplifiers, and simple microprocessors. Prerequisite: EE 301, 302. Corequisite: EE 401.

412-4 Industrial Controls and Automation
For each student to gain a working knowledge of industrial controls and automation. Focus is on developing an understanding of wiring diagram creation, hardware selection, and programmable logic controller design and operation. Includes laboratory. Prerequisite: EE/CEG 260 or EE 401 and 402.

413-3 Control Systems I
Introductory course providing students with a general control background. Major topics include block diagrams and signal-flow graphs, electromechanical modeling including state variable representation, time response, root locus, and introduction to design. Prerequisite: ME 213, EE 321. Co- or post-requisite: EE 414.

414-1 Control Systems I Laboratory
Application and testing of control systems theory with electromechanical systems. Pre- or corequisite: EE 413.

415-3 Control Systems II
Using Control Systems I background, this course concentrates on controller design, in both the time and frequency domains, using Nyquist, Bode, and root locus techniques. Prerequisite: EE 413, 414.

416-1 Control Systems II Laboratory
Application and testing of control systems theory with electromechanical systems. Prerequisite: EE 413, 414. Pre- or corequisite: EE 415.

417-3 Digital Control Systems
Samples spectra and aliasing, analysis and design of digital control systems using root locus and transform techniques; discrete equivalents of continuous controller, quantization effects, and introduction to programmable logic controllers. Prerequisite: EE 322, EE 415.

418-4 Control Systems Design Project
A project-oriented design course integrating design methodology with the principles of controller design developed in previous courses. Topics include project planning, system specs, documentation, design reviews, written and oral reports, and system test. 2 hours lecture, 4 hours lab. Prerequisite: EE 417 and EE 420.

419-4 Introduction to Fuzzy Logic Control
(Also listed as CEG 419.) Foundations and philosophy of fuzzy logic and applications to control theory. Relationships between classical PID control and fuzzy rule-based control. Techniques for rule construction and adaptive fuzzy logic controllers. Case studies of fuzzy logic control applications. 3 hours lecture, 2 hours lab. Prerequisite: EE 413, 414.

420-1 Digital Control Systems Laboratory
Sampling, temperature control, position control on a microprocessor-based system, PLC implementation, quantization, error computational delay, and frequency response. Prerequisite: CEG 411, EE 415, EE 416. Corequisite: EE 417.

421-4 Communication Theory
Analysis of communication systems using the Fourier transform and the convolution integral. Discussion of Nyquist’s sampling theorem and an introduction to binary pulse code modulation (PCM). Various analog (AM, SSB, WBFM) and digital (BPSK, AK, FSK) modulation techniques are also discussed and analyzed. Prerequisite: EE 321.

425-4 Numerical Methods for Engineers
Root location, polynomial interpolation, numerical methods for linear systems analysis, matrix
methods in circuit analysis; frequency domain circuit analysis techniques. Prerequisite: EE 321, MTH 253, proficiency in “C”, Pascal or FORTRAN.

**431-3 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. Prerequisite: EE 321, 331, and 332. Corequisite: EE 303, 304, and 432.

**432-1 Electronic Circuits Laboratory**
Design of single and multiple stage amplifier circuits, feedback amplifiers, circuits to meet frequency response specifications and output stages. Prerequisite: EE 331 and 332. Corequisite: EE 431.

**435-4 Design and Implementation of Analog and Digital Filters**

**436-4 Digital Signal Processing: Theory, Application, and Implementation**
Introduces the principles and applications of digital signal processing (DSP) from the design and implementation perspective. Topics include analog-to-digital/digital-to-analog converters and digital filters. Fourier analysis algorithms, and real-time applications, all implemented on a TMS320C30 floating point DSP chip. Prerequisite: EE 322, CEG 220 or CS 240.

**444-4 Linear Integrated Circuits**
Theory and applications of linear integrated circuits. Topics include ideal and real operational amplifiers, frequency response and compensation, active filters, comparators, and waveform generators. 3 hours lecture, 2 hours lab. Prerequisite: EE 431, 432.

**445-4 Electromagnetic Compatibility**
Identification of possible sources of electromagnetic interference (EMI) in an electronic device or system. Fundamental EMC design principles concerning conducted and radiated emissions, reduction of susceptibility to EMI and EMI shielding. Prerequisite: EE 345.

**446-4 Microwave Circuit Design**
Review of Smith chart, introduction to microstrip lines, impedance matching, power gain equations, stability considerations, design methods for amplifiers and oscillators. CAD is used. Prerequisite: EE 346.

**447-4 Antenna Theory and Design**
Linear dipole antennas, antenna arrays, thin-wire antennas, moment method analysis examples (yee dipole, folded dipole, etc.), broadband and frequency-independent antennas. Computer-aided design and analysis of wire antennas, feed networks, and antenna arrays using antenna CAD software. Prerequisite: EE 346.

**448-4 RF/Microwave Systems Design Projects**
A project-oriented design course, integrating design methodology with the principles of microwave circuit analysis and electromagnetic wave propagation developed in previous courses. Formal documentation, design reviews, and reporting are required. Prerequisite: EE 446.

**449-4 Pulse and Digital Circuits**
Design, analysis, and application of pulse and switching circuits using both Field Effect Transistors (FETs) and Bipolar Junction Transistors (BJTs). Transistor level design of digital integrated circuits including NMOS, CMOS, TTL, and ECL logic families. Design of digital interface and buffer circuits. Transmission line effects in digital applications. 3 hours lecture. 2 hours lab. Prerequisite: EE 431, 432.

**451-4 Digital Systems Design**
(Also listed as CEG 360.) Topics include flip-flops, registers, counters, programmable logic devices, memory devices, register-level design, and microcomputer system organization. Students must show competency in the design of digital systems. 3 hours lecture. 2 hours lab. Prerequisite: EE 260.

**454-4 VLSI Design**
(Also listed as CEG 454.) Introduction to VLSI system design. Topics include CMOS devices and circuit design techniques, basic building blocks for CMOS design, fabrication processing and design rules, chip planning and layout, system timing and power dissipation, simulation for VLSI design, and signal processing with VLSI. Prerequisite: EE 431, 432, EE 451/CEG 360.

**455-4 Electronic Circuits Design Project**
A project-oriented design course, integrating design methodology with the principles of integrated circuit design, developed in previous courses. The focus of the course is an integrated circuit design project including the topics of project selection, planning and management, system specification, documentation, design reviews, written and oral reports, and testing. 2 hours lecture, 4 hours lab. Prerequisite: EE 454.

**456-4 Introduction to Robotics**
(Also listed as CEG 456, ME 456.) An introduction to the mathematics, programming, and control of robots. Topics include coordinate systems and transformations, manipulator kinematics and inverse kinematics, trajectory planning, Jacobians, and control. Prerequisite: Senior standing and MTH 253; proficiency in Pascal, C, or FORTRAN programming.
458-4 Digital Integrated Circuit Design with PLDs and FPGAs
(Also listed as CEG 458.) Design and application of digital integrated circuits using programmable logic devices (PLDs) and field programmable gate arrays (FPGAs). A commercial set of CAD tools (Mentor Graphics and Xilinx) will be used in the laboratory portion of the course. Prerequisite: EE 451.

459-4 Integrated Circuit Design Synthesis with VHDL
(Also listed as CEG 459.) Application of VHDL hardware description language (VHDL) to the design, analysis, multi-level simulation and synthesis of digital integrated circuits. A commercial set of CAD tools (Mentor Graphics) will be used in the laboratory portion of the course. Prerequisite: CEG 220, C programming or equivalent and EE 260.

473-4 Communication Systems Design
Concepts and techniques of probability theory are reviewed and extended to random process and information theory. Baseband digital PCM technique, selected digital RF modems, and introduction to communication networks are presented. Prerequisites: STT 363, EE 421.

475-3 Introduction to Radar Systems
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. Prerequisite: EE 322.

476-4 Communication/Signal Processing Design Projects
A project-oriented communication and signal processing design course involving a problem definition stage, an analysis and design stage, and a final implementation stage. Topics include project selection, planning and management, system specification, design reviews, written and oral reports, and final system testing. 2 hours lecture, 4 hours lab. Prerequisite: EE 436 and either EE 435 or EE 473.

478-3 Coding Theory
(Also listed as MTH 456, CEG 478.) Examines the essentials of error-correcting codes and the study of methods for efficient and accurate transfer of information. Topics to be covered include basic concepts, perfect and related codes, cyclic codes, and BCH codes. Prerequisite: MTH 253 or MTH 355 (or equivalent).

480-1 to 4 Selected Topics in Electrical Engineering
Prototype offering for a new course in electrical engineering. Topics and prerequisites vary.

499-1 to 4 Special Problems in Engineering
Special problems in advanced engineering. Topics vary.

Engineering/EGR
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-1 Engineering and Computer Science Orientation
Introduction to the College of Engineering and Computer Science and overview of the degree programs offered. Provides information on degree entrance requirements, academic policies and procedures, study and success strategies, team building skills, interpersonal communication, engineering ethics and honors, student clubs, cooperative education opportunities, and career guidance.

153-4 FORTRAN Programming
Introduction to the use of digital computers with structured FORTRAN as the programming language. Algorithm development and engineering problem-solving techniques. Use of library subroutines and graphical displays. Corequisite: MTH 229.

199-1 to 4 Special Topics in Engineering
Topics may vary. May be taken for letter grade or pass/unsatisfactory.

335-3 Technical Communications for Engineers and Computer Scientists
A modular approach to oral and written communication of complex technical information to an expert audience. Includes describing technical mechanisms and processes; designing and using tables, graphs, charts, and figures; producing technical proposals, progress reports, feasibility reports, and formal reports; and doing technical briefings. Prerequisite: ENG 101, 102, and sophomore standing.

482-3 Engineering Fundamentals
A review of the fundamental concepts covered in an undergraduate engineering curriculum to help students prepare for the fundamentals of engineering examination. Senior standing in an engineering program or graduation from an engineering program required. May be taken for a letter grade or pass/unsatisfactory.

499-1 to 5 Special Problems in Engineering
Special problems in advanced engineering. Topics vary. May be taken for letter grade or pass/unsatisfactory.
Engineering Physics/EP

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

231-1 Contemporary Areas of Engineering Physics
Survey of areas of engineering physics. Discussion of specific problems in fields such as space science, fluid and plasma dynamics, thermal science, lasers, instrumentation, materials research, and nuclear engineering.

322-4 Applied Optics
(Also listed as PHY 322.) 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. Prerequisite: MTH 253, PHY 244 or equivalent.

400-3 Properties of Semiconductor Materials
(Also listed as PHY 400.) Crystal structure, energy bands, charge carriers, and carrier motion in semiconductors. Electrical and optical properties. P-N junction diodes. Equilibrium, dc, ac, and transient characteristics. Metal-Semiconductor junctions. Diode design. Prerequisite: PHY 242, 244 and CHM 121. (Previously listed as EP 300.)

401-3 Semiconductor Device Physics
(Also listed as PHY 401.) Covers structure and characteristics of bipolar transistors, field effect transistors, and other selected devices. Includes design and computer modeling of devices. Prerequisite: EP 400 or PHY 400. (Previously listed as EP 301.)

402-3 Semiconductor Device Processing
(Also listed as PHY 402.) Survey of the individual processes used in fabricating semiconductor devices. Integration of these processes to produce MOS and bipolar structures. Computer design aids. Prerequisite: EP 401, EP 401, or ME 370. (Previously listed as EP 302.)

432-3 Lasers
(Also listed as PHY 432.) 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 260, MTH 233 or permission of instructor.

494-3 Engineering Physics Projects
Independent design/development/research projects in engineering physics. A detailed written final report and seminar presentation are required. A project proposal must be approved by the program faculty before registration.

499-3 Honors Engineering Physics Projects
Independent design/development/research projects in engineering physics for departmental honors students. A final report, seminar presentation, and journal submission are required. A project proposal must be approved by the program faculty before registration.

English/ENG

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.

094-4 English as a Second Language: Speaking
Basic course in spoken English, both production and comprehension. For non-native speakers of English only.

097-4 English as a Second Language: Basic Writing
Basic course in written communication with an emphasis on sentence structure. For non-native speakers of English only.

098-4 English as a Second Language: Advanced Writing
Course in written communication with an emphasis on grammatical structures, organizational skills, and topic development. For non-native speakers of English only.

101-4 Processes of Writing
Introduces students to principles of effective written communication and concepts of reading and writing to learn. Stresses invention, drafting, revising, and editing, along with effective critiquing and collaborating. Enrollment based on placement essay examination.

102-4 Effective Written Discourse
Adapts principles introduced in ENG 101 to writing tasks assigned throughout the university. Stresses writing effectively within various forums, reading critically, using source materials, and summarizing. Prerequisite: C or better in ENG 101.

190-3 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. Prerequisite: ENG 102.

199-1 to 4 Topics in English
Problems, approaches, and topics in the field of English. Topics vary. May be taken for letter grade or pass/unsatisfactory.

201-3 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. Prerequisite: ENG 102.

202-3 The Literary Tradition
Readings in British and American literature; for example, Shakespeare, American Masterpieces, British Novel, and Readings in Biography. Prerequisite: ENG 102.

203-3 World Literature
Readings in world literature; for example, the Literature of Africa, the International Best Seller, and the Hero in World Myth. Prerequisite: ENG 102.

204-3 Great Books: Literature
Introduction to selected masterpieces of poetry, drama, and fiction from the Western literary tradition of the Greeks to the twentieth-century, viewed in their historical context and read for their enduring interest.

205-3 Afro-American Literature
Readings in African-American literature; for example, Phyllis Wheatley to the present, nineteenth-century freedom literature, twentieth-century black novel, and the female African-American tradition. Title vary. Prerequisite: ENG 102.

210-3 Introduction to Poetry
Poetry as a type of literature together with an introduction to various approaches to the enjoyment of poetry. Prerequisite: ENG 102.

211-3 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. Prerequisite: ENG 102.

212-3 Introduction to Drama
Introduction to the study and analysis of drama including differences among plays of different periods. Prerequisite: ENG 102.

214-4 The Study of Literature I
Introduction to the discipline of English, with a focus on the study of poetry and the writing of critical papers on literary topics. Prerequisite: ENG 102.

215-4 The Study of Literature II
Introduction to the discipline of English, with a focus on the study of narrative and the techniques of literary analysis and research. Prerequisite: ENG 250 or 255 or 256.

217-3 Introduction to Creative Writing
Introduction to the fundamental techniques and strategies of poetry and short fiction; analysis of anthologized poems and stories; and group discussion of manuscripts. Prerequisite: ENG 102.

291-3 Introduction to Creative Writing
Introduction to the fundamental techniques and strategies of poetry and short fiction; analysis of anthologized poems and stories; and group discussion of manuscripts. Prerequisite: ENG 102.

302-4 Poetry Writing
Fundamentals of poetry writing; practice in traditional and contemporary concepts of poetic form; reading and discussion of a wide spectrum of traditional and modern poetry; and group discussion of students' poems. May be repeated twice for credit. Prerequisite: ENG 102.

303-3 Short Story Writing
Introduction to the theory and practice of writing the short story, including critical reading of contemporary short stories and group discussion of student written stories. May be repeated twice for credit. Prerequisite: ENG 102.

304-4 Dramatic Writing
(Also listed as TH 304) Theory and practice of techniques of dramatic writing emphasizing writing of original plays. Prerequisite: ENG 102.

330-4 Business Writing
Written business and organizational communication; attention to various forms including short reports and informal oral presentations. Prerequisite: ENG 102.

333-4 Fundamentals of Technical Writing
Survey of the fundamental principles and skills used in scientific and technical writing. Prerequisite: ENG 102.

340-4 Language for Elementary Teachers
Systematic methods of examining the sound system and sentence structure of English, with applications of language acquisition and variation related to the elementary classroom. Prerequisite: ENG 102.

341-3 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. Prerequisite: ENG 102.

342-3 Advanced Composition for Elementary Teachers
Study and practice of writing emphasizing informative and creative writing taught in the elementary school and problems of teaching writing to elementary school students. Prerequisite: ENG 102.

343-4 Advanced Composition
Emphasis on sophisticated techniques of expository writing and the refinement of style. Prerequisite: ENG 102.

344-4 Research Writing
Instruction in organizing, documenting, and writing of research papers. Research projects based not only on primary and secondary sources.
but also on experiment and investigation. 
Prerequisite: ENG 102.

347-4 Desktop Publishing and Technical Graphics
Introduction to the design and illustration of technical documents through labs requiring use of word processing and desktop publishing systems.

350-4 British and American Literature: History
Representative works from major periods of British and American Literature, read with attention to their historical background and cultural contexts. Prerequisite: ENG 102.

351-4 British Texts: Medieval to 17th Century
Representative works of major English writers of the medieval period and the sixteenth century. Prerequisite: ENG 102.

352-4 British Texts: 17th to 18th Centuries
Representative works of major British writers of the seventeenth and eighteenth centuries. Prerequisite: ENG 102.

353-4 British Texts: 19th Century
Representative works of major Romantic and Victorian writers. Prerequisite: ENG 102.

354-4 British Texts: 20th Century
Representative works of major English writers of the modern period. Prerequisite: ENG 102.

355-4 American Texts: Earlier 19th Century
Representative works of major American writers before the Civil War. Prerequisite: ENG 102.

356-4 American Texts: Later 19th Century
Representative works of major American writers from the Civil War to World War I. Prerequisite: ENG 102.

357-4 American Texts: 20th Century
Representative works of major American writers since the twenties. Prerequisite: ENG 102.

359-4 Post-Colonial Texts
Representative works of major anglophone writers from around the world. Prerequisite: ENG 102.

364-4 Communication Graphics
(Also listed as COM 364.) Introduces basic principles of graphics communication, primarily as applied to print media. Includes the history and basic concepts of graphics communication, typography, photo editing, and graphic design.

366-4 Advanced News Writing
(Also listed as COM 366.) Advanced study of writing skills, practices, and procedures used in reporting news for mass media. Actual reporting in the field is required. News writing skills introduced in COM 256 are further refined. Prerequisite: ENG 257 or COM 256.

392-4 Poetry Writing Workshop
Intermediate practice in writing and revising poems, refining craft and style, with the aim of producing poetry of superior merit; group discussion of manuscripts; and reading and discussion of modern poetry and poetics. May be repeated twice for credit. Prerequisite: ENG 302 or permission of instructor.

393-4 Fiction Writing Workshop
Intermediate study and practice of the techniques and forms of fiction in a continuing workshop environment, with focus on improving the narrative skills of individual students. May be repeated twice for credit. Prerequisite: ENG 303 or permission of instructor.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of English. Topics vary. Prerequisite: ENG 102.

400-4 Advanced Technical Writing
Reviews the fundamentals of technical writing with attention to reports, proposals, manuals, technical articles, and style manuals. Emphasis on writing for specific fields with opportunity for independent writing projects in the student's major field. Prerequisite: ENG 333 and 347.

402-4 Technical Editing
Experience in various elements of technical editing—grammar, style, and content; editing for consistency of format and adherence to standards; and preparing a document for printing. Prerequisite: ENG 400.

405-1 to 6 Topics in Technical Writing
Courses, seminars, or workshops in specialized topics relating to technical writing. Prerequisite: ENG 400 or permission of instructor.

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.

410-4 Studies in British Literature
Intensive study of British literary history and/or the work of individual British writers. Intended to develop an understanding of literature within the contexts of the author's life, literary production, and historical background. Prerequisite: ENG 255/256 or ENG 251; at least one of the ENG 350-359 sequence.

420-4 Studies in American Literature
Intensive study of American literary history and/or the work of individual American writers. Intended to develop an understanding of literature within the contexts of the author's life, literary production, and historical background. Prerequisite: ENG 255/256 or ENG 251; at least one of the ENG 350-359 sequence.

430-4 Studies in Literature, Gender, and Sexuality
Intensive study of literature from the perspectives of gender theory. Intended to develop an understanding of gender and sexuality as important both to literature and to its critical appreciation. Prerequisite: ENG 255/256 or ENG 251; at least one of the ENG 350-359 sequence.
440-4 Studies in Ethnic and Regional Literature
Intensive study of literature from different regions of America or reflecting the experiences of different ethnic groups. Intended to develop an understanding of race, region, and ethnicity as important both to literature and to its critical appreciation. Prerequisite: ENG 255/256 or ENG 251; at least one of the ENG 350-359 sequence.

450-4 Studies in Literary Theory
Intensive study of literary theory in order to develop an understanding of critical questions and approaches. Prerequisite: ENG 255/256 or ENG 251; at least one of the ENG 350-359 sequence.

454-4 Feature Story Writing
(Also listed as COM 454.) Finding, writing, polishing, and marketing feature material. Prerequisite: ENG 257 or COM 256 or permission of instructor.

458-4 Editing for the Media
(Also listed as COM 458.) Editing of copy for mass media with emphasis on newspaper format, headline writing, rewriting, and general copy desk. Prerequisite: ENG 257 or COM 256 or permission of instructor.

460-4 Studies in Literary Genres and Themes
Intensive study of literary genres (e.g., poetry, the novel, satire) or of literary themes. Intended to develop an understanding of formal and structural aspects of literature. Prerequisite: ENG 255/256 or ENG 251; at least one of the ENG 350-359 sequence.

470-4 Studies in World Literature
Intensive study of non-European literature, focused nationally, regionally, cross-culturally, thematically, and generically. Prerequisite: ENG 255/256 or ENG 251; at least one of the ENG 350-359 sequence.

477-1 to 3 Workshop
Intensive study of selected special topics or problems to meet the particular needs of participating students. Titles vary.

478-4 Introduction to Linguistics
Survey of major branches of English linguistics: present-day phonology, morphology, syntax, and their historical development; and social and psychological approaches to language. Prerequisite: ENG 102.

479-4 History of the English Language
Study of the ancestry and early growth of the English language, the history of English sounds and inflections, the development of the English vocabulary, and variations in pronunciation and usage in modern British and American English. Prerequisite: ENG 102.

480-4 Studies in Language and Literacy
Intensive study of linguistic and/or rhetorical approaches to language. Intended to develop an understanding of language history, structure, theory, pedagogy, and context. Prerequisite: ENG 478.

481-4 Theory of ESL (English as a Second Language)
Presents a theoretical foundation for the study of second language acquisition, including first language acquisition, interlanguage, contrastive analysis, error analysis, language universals, communicative competence, and learning theory. Prerequisite: ENG 478.

482-4 Grammatical Structures of English
Provides a basic understanding of English morphology and syntax, including the terminology and methodology of contemporary grammar as applied to teaching. Relates grammatical issues to the teaching of English to non-native speakers. Prerequisite: ENG 478.

483-4 Sociolinguistics
Investigates the different subcategories of sociolinguistics, including the sociology of language, the ethnography of speaking, and variation in language structures. Prerequisite: ENG 340 or 478.

484-4 TESOL Methods and Materials
Readings in approaches and methodologies for teaching English to speakers of other languages. Evaluation of techniques and materials used in communicative second or foreign language teaching. Prerequisite: ENG 340 or 478.

485-2 to 4 Studies in English Education
(Also listed as ED 420.) Focus on theoretical issues and practical problems of teaching English at all levels, including the teaching of writing and teaching of English to speakers of other languages (TESOL). Prerequisite: ENG 340 or 478.

490-4 Senior Seminar in Literature
Intensive study and discussion of a significant writer or work. Students will conduct a quarter-long research project culminating in a seminar paper; students will also prepare a portfolio of their undergraduate work. Titles vary. Prerequisite: ENG 251 and at least three courses from ENG 410-480 series.

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. Limited to senior English majors with a 3.0 cumulative average.

492-4 Poetry Writing Seminar
Advanced students work closely with instructor on writing and revision, leading to the creation of professional and publishable poetry. Reading and discussion of contemporary poetry and poetics. May be repeated twice for credit. Prerequisite: Permission of instructor.

493-4 Fiction Writing Seminar
Advanced study and practice of the techniques and forms of fiction of any length, with emphasis on producing fiction of professional and publishable quality. May be repeated twice for credit. Prerequisite: 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.

498-2, 499-2 English Honors Tutorial
Two-quarter sequence for senior English majors who are doing an English honors project.

Environmental Health Sciences/ EH

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.

360-3 Environmental Aspects of Water Quality
Relationship of physical and biotic environments 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. Prerequisite: BIO 252, CHM 123.

362-3 General Environmental Health
Relationship of physical/chemical/biotic environments to design/operation of systems and procedures employed in maintenance/promotion of quality, healthful human environments. Emphasized: food/dairy sanitation; solid waste; institutional/housing/recreational sanitation; and vector control.

364-3 Solid and Hazardous Waste Management
Examines the fundamentals of solid, infectious, and hazardous waste management. Topics covered include regulatory history, regulatory processes, environmental audits, requirements for waste generators, transporters, treatment/storage/disposal facilities, and pollution prevention concepts.

366-9 Environmental Sciences 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. For environmental health majors only. Prerequisite: Three 300-level EH courses.

368-4 Hazardous Materials Health and Safety
Covers the operation of managing hazardous materials and emergency response in the workplace or at spills or hazardous waste sites. Satisfies OSHA training requirements No. 29 CFR 1910.120. Prerequisite: CHM 123.

401-1 to 5 Topics in Environmental Science
Advanced topics of current interest in the environmental sciences. Topics vary. May be taken for a letter grade or pass/unsatisfactory.

431-3 Risk Assessment
Studies the determination of quantitative risk to humans and the environment. Approaches currently used in regulatory activities are described, showing method of hazard identification, sampling, data evaluation, exposure assessment, toxicity assessment, and risk characterization. Minimum of 2 BIO courses and completion of freshman chemistry required.

432-3 Risk Assessment II
Designed as a follow-up course to EH 431. Studies of key components of risk assessments, will include pharmacokinetic modeling, environmental fate and transport modeling, low dose extrapolation, and risk communication. Prerequisite: EH 431.

451-3 Environmental Management and Risk Communication
Enlarges students’ environmental perspectives by focusing on management issues as they relate to air, water, and land resources, including ethics, policy, and economics, as well as questions relating to specific resources.

461-2 Problems in Environmental Health
Seminar/workshop in professional aspects of environmental health. For environmental health majors only. Prerequisite: EH 366 or permission of instructor.

462-3 Epidemiology and Community Health
Communicable and occupational diseases of contemporary importance; includes epidemiological investigation, environmental considerations, and control procedures. Prerequisite: EH 360 and 362 and STT 264 or permission of instructor.

463-3 Public Health Organization
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.

466-3 Fundamental 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 123.

467-3 Fundamental Occupational Health and Safety Laboratory
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 123.
468-3 Advanced Occupational Health and Safety
Introduction to industrial hygiene. Emphasis on routes of entry into the human body and physiological effects of industrial pollutants. Prerequisite: CHM 123.

472-3 Air Quality Management
Designed to provide a broad overview of the science of air quality and its management: includes atmospheric pollutants, dispersion, health and welfare effects, quality monitoring, source control, regulation, and indoor air pollution.

492-2 Environmental Issues Seminar
Students will gain a better understanding of the controversies surrounding many current environmental issues, while also enhancing their library research, presentation, and advocacy skills.

Finance/FIN

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

205-3 Personal Financial Management
Provides knowledge that helps nonbusiness students 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.

280-3 Special Topics in Finance
Seminar in a finance topic of current and timely interest. Topics and prerequisites vary. For nonmajors only.

All of the following courses require junior standing in addition to the listed prerequisites.

301-3 Business Finance I
Introduction to the basic concepts, principles, and analytical techniques of financial management. Topics include financial planning and analysis, risk and return, time value of money, and capital budgeting. Prerequisite: ACC 202, CS 205, EC 201, 202, 203, MS 202.

302-3 Business Finance II
Continuation of FIN 301. Emphasis on financial decisions and cost of capital. 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 302.

305-3 Personal Financial Planning
Financial problems encountered in managing individual affairs such as family budgeting, installment buying, insurance, home ownership, investment in securities, taxes, retirement planning, and estate planning.

331-3 Real Estate Principles and Practices
Introduction to the principles and practices of real estate. Topics include the real estate profession and industry, real estate contracts, market analysis, valuation approaches, financing techniques, investment analysis, and home ownership. Successful completion of this course meets part of the licensing requirements for real estate salespeople in Ohio.

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), conveying of real estate, real estate managers, zoning, cooperatives, condominiums, and license laws of Ohio. Successful completion of this course meets part of the licensing requirements for real estate salespeople in Ohio.

351-3 Risk and Insurance
Introduction to principles and practices of personal risk management and insurance. Topics include property and liability insurance, life insurance, disability insurance, health insurance, and social security.

401-3 Investing in Securities
Introduction to the theory and practice of investing in stocks, bonds, and other securities. Prerequisite: FIN 302.

402-3 Seminar in Investments
Advanced treatment of the theory and practice of investing. Provides opportunities for individual investigation of selected topics. Prerequisite: FIN 401.

411-3 Management of Financial Institutions
Analysis of issues relating to the financial management of financial institutions. Prerequisite: FIN 302.

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.

421-3 Working Capital Management
Theory and practice of working capital management, including cash management, credit policy, inventory policy, and short-term financing. Extensive use of cases. Prerequisite: FIN 302.

433-3 Real Estate Finance
In-depth study of the instruments, markets, techniques, and strategies of real estate finance. Successful completion of this course meets part of the licensing requirements for real estate brokers in Ohio. Prerequisite: FIN 302, 331.

434-3 Real Estate Valuation and Appraisal
In-depth analysis of the theory and practice of valuing and appraising real estate. Successful completion of this course meets part of the licensing requirements for real estate brokers in Ohio. Prerequisite: FIN 302, 331.
435-3 Investing in Real Estate
Explores the theory and practice of real estate investment analysis as it relates to personal financial planning objectives. Prerequisite: FIN 302, 331, ACC 441.

452-3 Life and Health Insurance
Analysis of the 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 are analyzed. Individual and group plans are covered. Prerequisite: FIN 351.

453-3 Property and Liability Risk Management
Study of the concepts and techniques of property and liability risk management from the perspective of both individuals and business firms. Prerequisite: FIN 351.

461-3 Retirement Planning and Employee Benefits
Familiarizes students with the concepts of retirement planning and employee benefits and the application of these concepts to overall financial planning for individuals and small businesses. Prerequisite: FIN 302, 351; ACC 441.

462-3 Estate Planning
Provides a theoretical and practical approach to estate planning. Includes estate and gift taxes, wills, trusts, and estate planning techniques. Prerequisite: FIN 302, 351, ACC 441.

463-3 Seminar in Financial Services
Emphasizes the development and application of a coordinated and systematic approach to financial planning. Extensive use of cases. For financial services majors only. Prerequisite: FIN 401, 461, 462; MKT 336.

470-3 or 6 Practicum in Financial Planning
Students participate in financial planning laboratories and attend workshops on interviewing techniques, data gathering, plan preparation, and computerized planning models. For financial services majors only. Prerequisite: FIN 351, 401, 461, ACC 441, and permission of instructor.

477-1 to 3 Finance Studies
Independent study in selected areas of finance or financial services.

478-1 to 6 Honors: Independent Study in Finance
Research in finance for fulfillment of the Honors Program project requirement.

480-1 to 6 Special Topics in Finance
Seminar in a finance topic of current and timely interest. Topics and prerequisites vary.

481-3 or 6 Internship in Finance
One-quarter faculty-supervised internship in finance. Students work in a firm or public agency, participate in seminars, and submit reports. Topics vary.

490-3 International Financial Management
Study of the international aspects of financial management. Topics include foreign exchange management, international capital budgeting, international financing, tax planning, and working capital management. Prerequisite: FIN 302.

French/FR

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.

111-4 Essentials of French
Introduction to French with emphasis on speaking the language.

150-4 French Grammar Review
A thorough review of French grammar with an emphasis on oral practice.

201-4, 202-4, 203-4 Second-Year French
Grammar review, reading and discussion of selected texts, with practice in speaking and writing the language. Prerequisite: for 201, FR 103 or equivalent; for 202, FR 201 or equivalent.

311-4, 312-4 French Conversation
Practice in oral use of French emphasizing the culture of the French-speaking world. Prerequisite: FR 203 or equivalent.

321-4, 322-4 French Composition
321 and 322: Writing techniques and grammar review; written stylistic analyses. Prerequisite: FR 203 or equivalent.

323-4 French Composition
Introduction to written literary analysis of poetry, prose, and drama. Prerequisite: FR 203 or equivalent.

325-4 Business French
An introduction to the language of business French with insight into France's place in the global economy. Prerequisite: FR 203.

331-4, 332-4 Survey of French Literature
331: Middle Ages, sixteenth and seventeenth centuries, 332: eighteenth, nineteenth, and twentieth centuries. Prerequisite: FR 312 and 322 or permission of instructor.

FR 312, 322, and 332 or permission of instructor are prerequisites for the following advanced courses:

351-4 French Civilization
Study of the main currents of French civilization with 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.
Course Descriptions

Applied Elementary French Instruction
French majors assist elementary course instructors in conducting classes. For French majors only.

Studies in Selected Subjects
Problems, approaches, and topics in a field of French. Topics vary.

Advanced Studies: Language/Civilization
Conducted in French. Topics vary.

Literature of the Middle Ages
Les Chansons de Geste: Roland, Guillaume; le roman de Tristan, Chrétien de Troyes; le roman de Renart; theatre; and le roman de la Rose. Prerequisite: FR 322, 332; or permission of instructor.

Villon to Chénier
Three centuries of French poetry: Villon, Scève, Marot, Du Bellay, Ronsard, d'Aubigné, Malherbe, La Fontaine, Boileau, Voltaire, and Chénier. Prerequisite: FR 322, 332; or permission of instructor.

17th- and 18th-Century Novel
Mme. de La Fayette, Scarron, Fénelon, Montesquieu, Lesage, Prévost, Diderot, and Laclos. Prerequisite: FR 322, 332; or permission of instructor.

Libertines and Moralists: From Rabelais to Voltaire
Currents of skepticism and humanism in the intellectual history of France. Major authors: Rabelais, Montaigne, Cyrano de Bergerac, Saint-Evremond, La Bruyère, La Rochefoucauld, Bayle, Fontenelle, Diderot, and Voltaire. Prerequisite: FR 322, 332; or permission of instructor.

17th- and 18th-Century Theatre
Works of Corneille, Molière, Racine, Marivaux, Diderot, Voltaire, and Beaumarchais. Prerequisite: FR 322, 332; or permission of instructor.

The Enlightenment
History of political and social ideas in eighteenth-century France. Based principally on works of Montesquieu, Diderot, Voltaire, and Rousseau. Prerequisite: FR 322, 332; or permission of instructor.

Independent Undergraduate Research
Topics vary.

Romanticism from Rousseau to Hugo
Includes Bernardin de Saint-Pierre, Chateaubriand, Mme. de Staël, Nodier, Lamartine, Vigny, Musset, and Nerval. Prerequisite: FR 322, 332; or permission of instructor.

19th-Century Novel
Chateaubriand, Constant, Stendhal, Balzac, Flaubert, Zola, and France.

Poetry from Baudelaire to Breton
Symbolists, Decadents, and Surrealists.

19th-Century Short Story
Intensive study of such authors as Mérimée, Gautier, Balzac, Flaubert, Maupassant, and Villiers de l'Isle Adam. Prerequisite: FR 322, 332; or permission of instructor.

20th-Century Literature
462-4, 463-4, 464-4 20th-Century Literature
462: The Novel. 463: Drama. 464: Poetry. Prerequisite: FR 322, 332; or permission of instructor.

Problems in French Literature
Selected topics in French literature that investigate various themes, myths, genres, literary movements, or characters. Titles vary.

Independent Reading for Advanced Students
Topics vary.

Geography/GEO

Global Awareness through Map Study
Introduction to maps and their uses as a means to gain global awareness.

Principles of Physical Geography
Study of the elements of the human natural environment at regional and global scales including examination of the interactions among climate, soils, vegetation, landscapes, and people.

Principles of Cultural Geography
Study of major cultural elements of the human environment including examination of their spatial interactions and factors influencing their location and distribution.

Principles of Economic Geography
Examination of the principal geographic factors influencing human activities related to production, exchange, and consumption of goods and services.

Urban Planning I: 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.

Urban Planning II: 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; and determinants of future urban structure. Prerequisite: GEO 317 or permission of instructor.
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 people. Prerequisite: GEO 201 or permission of instructor.

325-4 World Regional Geography
    Discussion of the nature of selected world regions and their spatial relationships. Emphasizes the unique characteristics of the cultures and landscapes of these regions applying basic geographic concepts.

331-4 Meteorology
    Development and application of first principles governing the atmosphere at rest and in motion. Examination of the general circulation and 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. For nonmajors only.

340-4 Urban Geography
    General non-technical introduction to urban geography focusing on major geographic concepts and principles relating to location, function, and structure of urban areas.

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.

353-4 Location Theory
    Study of theoretical aspects of the location of human activities. Introduction to theories and concepts regarding location and spatial arrangement of economic activities. Prerequisite: GEO 203 or permission of instructor.

354-4 Geography of Manufacturing
    Factors of industrial location using empirical examples. Includes introduction to basic theories and techniques underlying the decision process in manufacturing locations.

361-4 Remote Sensing
    Basic survey of imaging remote sensor types and their operational characteristics including sensors for the ultraviolet, visual, infrared, and microwave portions of the electromagnetic spectrum. Prerequisite: GEO 201 or permission of instructor.

362-4 Remote Sensing of the Environment
    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 their 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. Topics vary.

375-4 Environmental Conservation
    Economic and geographic appraisal of resource conservation in the world, emphasizing an analytical approach to solving such contemporary problems as human population growth, environmental quality, recreation and open space, and resource management. Prerequisite: GEO 202 or 203.

385-5 Geographic Methodology
    Examination of the nature, tools, methods, and techniques of geographic analysis. Emphasis on design, compilation, interpretation, and presentation of research materials.

399-1 to 4 Studies in Selected Subjects
    Problems, approaches, and topics in the field of geography. Topics vary.

414-4 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.

419-4 Urban Planning III: The Land Use Plan
    Process of preparing comprehensive urban plans. Methods for assessing land use conditions, housing patterns, and urban deterioration. Students participate in the development of a land use plan for selected area. Prerequisite: GEO 312.

430-4 Climatology I
    Observation, measurement, and analysis of climatic elements and controls, climatic classification, and relation of climate to human economic and social activities. (Previously listed as GEO 330.)

432-4 Climatology II
    Principles of physical and dynamical climatology. Evaluation of local and regional transports and conversions of energy in the earth-atmosphere system. Prerequisite: GEO 331.

441-4 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.

445-4 Intermediate Cartography and Map Interpretation
    Study and practice of compilation processes for the development of maps and models using 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 on the full spectrum of photo interpretation as applied to the controlled mapping of terrestrial and marine surfaces. Prerequisite: GEO 445 or permission of instructor.

447-5 Geographic Information Systems
Principles, structures, and applications of geographic information systems and utilization of data from topographic, remotely sensed, and photogrammetric sources. Prerequisite: GEO 365 or permission of instructor.

448-5 GIS Applications
Students apply GIS techniques to solve public/private sector information and development problems. Solutions entail data analysis and forecasting, using ARC/INFO geographic information system methods. Prerequisite: GEO 447.

455-4 Geography of Transportation
An analysis of spatial aspects and structural characteristics of transport networks, the movement of goods, and their relationship to regional economic structures. Prerequisite: GEO 203 or 353 or permission of instructor.

463-4 Geographic Applications for Remotely Sensed Data
Application of geographic methodology to problems employing photographic and machine-processed multispectral scanner data in contemporary use in academic research, environmental analysis, and planning. Prerequisite: GEO 362 or permission of instructor.

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. Prerequisite: GEO 312 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 students. Topics vary.

484-3 to 4 Biogeography
(Also listed as BIO 484.) Introduction to factors affecting the geographical distribution of plants and animals. Students registering for 3 credit hours attend lectures only; registration for 4 credit hours requires an additional laboratory section. Prerequisite: GEO 201, 330, or permission of instructor.

486-3 Foundations of Geography
A study of the evolution of the discipline through analyses of the approaches, emphases, methodologies, paradigms, and traditions in geography. Prerequisite: Completion of departmental core courses or 40 credit hours of geography courses or senior standing.

492-1 to 6 Geography Internship
Provides geography majors 15 clock hours of practical experience under academic supervision each week during the quarter with a cooperating public agency or private firm. Topics vary. For geography majors only.

Geological Sciences/GL

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

105-3 The Planet Earth
Introduction to the composition and structure of the earth through a study of the physical and chemical processes (weathering, sedimentation, and the plate tectonic cycle) that have produced the earth, its minerals, rocks, landforms, and economic mineral fuel deposits. Corequisite: GL 115.

106-3 The Evolving Earth
Exploration of time in geology through a study of the history of the earth and of life as revealed by the physical and biological evidence recorded in the rocks. Corequisite: GL 116.

107-3 The Earth and Human Affairs or Geologic Development of Ohio: Rocks, Fossils, and Resources
Examination of the interactions of humans with the earth in terms of geological hazards and natural resources. Also offered as Geologic Development of Ohio: Rocks, Fossils, and Resources, a field course emphasizing the geology of Ohio. Corequisite: GL 117.

111-4.5 Physical Geology Honors I
Comprehensive treatment of the dynamic systems and materials of the earth. External processes and resulting land forms are also studied. 3 hours lecture, 3 hours lab.

112-4.5 Physical Geology Honors II
Comprehensive treatment of external and internal processes of the earth and the resulting landforms. Introduction to earth resources and other earth-like planets. 3 hours lecture, 3 hours lab. Prerequisite: GL 111.

113-4.5 Historical Geology Honors
Summary of current thought about the earth's history from its origin to the present. Topics include movement and evolution of the earth's crust, world climatic changes, and evolution of plants and animals. 3 hours lecture, 3 hours lab.

115-1 The Planet Earth Laboratory
Study of rocks and minerals; field trips; map interpretation; and practical work on ground water, glaciation, and structural geology. Laboratory component for GL 105.
116-1 The Evolving Earth Laboratory
Exercises in time measurement, correlation of stratified rocks, evolution and biological diversity in the fossil record, and paleontology. Laboratory component for GL 106.

117-1 The Earth and Human Affairs Lab
Exercises and experiments on geologic hazards (earthquakes, floods, mass movements), resources (soil and water), and mineral economics. Also offered as Geologic Development of Ohio laboratory. Laboratory component for GL 107.

120-12 Honors Geology—Physical, Historical Field
Offers the equivalent of a three-quarter introductory geology sequence to honors students during one summer. Five weeks of double lectures and labs are followed by a five-week field trip to the northern Rocky Mountains.

199-1 to 4 Directed Studies
Research and problems related to specific needs and talents of students.

201-4 Hydrology and Water Resources
Hydrologic cycle; emphasizes past, present, and future problems in flood control, water pollution, and water resource development. 3 hours lecture, 2 hours lab or field trip. Prerequisite: MTH 126 or 127.

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.

251-3 Physical Geology and Geomorphology I
Comprehensive treatment of the dynamic systems and materials of the earth. External processes and resulting land forms are also studied. Corequisite: GL 252.

252-1.5 Physical Geology and Geomorphology Laboratory I

253-3 Physical Geology and Geomorphology II
Comprehensive treatment of external and internal processes of the earth and the resulting landforms. Introduction to earth resources and other earth-like planets. Prerequisite: GL 251, 252.

254-1.5 Physical Geology and Geomorphology Laboratory II
Laboratory for topographic and geologic map and geologic cross sections interpretation to recognize geological structures and their relation to geomorphology and landforms. Prerequisite: GL 251, 252.

255-3 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.

256-1.5 Historical Geology Laboratory

304-3 Earth Resources and Environmental Quality
Study of earth resources as the economic base of civilization. Natural geologic processes and geochemical cycles of global change are compared with human-induced impact on environment. Emerging trends in technology and policy matters and their influence on environmental quality are analyzed. Prerequisite: GL 105 and 106 or equivalent.

309-4 Geologic Hazards and Environmental Quality
Hazards from geologic materials: reactive minerals, the asbestos controversy, radioactive and toxic gases. Hazards from geologic processes: earthquakes, volcanic eruptions, slope processes, subsidence, floods, and coastal hazards. Geologic hazards monitoring, mitigation, and avoidance. Risk evaluation. 3 hours lecture, 2 hours lab or field trip.

310-3 Issues in Science
(Also listed as BIO 310, CHM 310, PHY 310, and MTH 310.) A writing-intensive course dealing with issues in science. Prerequisite: ENG 101, 102; a first-year science course.

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.

312-4 Advanced Structural Geology
Development of theory of rock behavior. Finite strain and gravity tectonics. 3 hours lecture, 2 hours lab.

342-4.5 Fossil Vertebrates and Plants
Morphology, geologic record, and geographic distribution of major vertebrate and plant groups characterized by significant fossil representation. 3 hours lecture, 3 hours lab. Prerequisite: (recommended preparation) GL 255 and GL 256.

345-4.5 Concepts in Geology
Accelerated treatment of principles of physical and historical geology pertinent to teaching students in grade school (K–8). Includes laboratory exercises that will be effective for teaching K–8 students and can be used in a self-contained classroom. Elementary Education majors only. Prerequisite: PHY 245, CHM 245.

365-3 Regional Geomorphology
Distribution, position, and surface form of geologic regions of the United States; study of the geologic structure that underlies them and the erosional processes that have modified their surface expressions.

381-6 Mineralogy and Crystallography
Lecture: Crystal properties and crystal classes. Study of approximately 100 important minerals. Lab: Stereoscopic and gnomic projections to identify
crystal forms, physical properties to identify minerals in hand sample. 3 hours lecture, 6 hours lab.

383-4.5 Sedimentary Petrology
Introduction to the optical properties of common minerals. Survey of sedimentary rocks in hand specimen, thin section, and field occurrence. 3 hours lecture, 3 hours lab. Prerequisite: GL 381 or GL 401.

385-4.5 Igneous and Metamorphic Petrology
Origin of igneous and metamorphic rocks. Lab: Use of thin sections and hand specimens for mineral identification, rock structures, and classifications. 3 hours lecture, 3 hours lab. Prerequisite: GL 383. (Previously listed as GL 382.)

399-1 to 6 Special Problems
Research problems for specific needs and talents of students. Topics vary.

400-3 Introduction to Solid Earth Physics
(Also listed as PHY 400.) Basics of seismic, gravimetric, magnetic, and heat conduction principles as used to determine the geophysical properties of solid earth. Emphasis on the deeper parts of the crust, the mantle, and the core. Prerequisite: MTH 229.

401-4.5 Rocks and Minerals
Study of the structure, symmetry, and composition of minerals and the composition, classification, and origin of rocks. Lab emphasizes mineral and rock identification. Prerequisite: GL 252.

405-4 Ground-Water Monitoring and Remediation
Principles of ground-water monitoring and cleanup system design. Theory and field practices for monitoring well drilling/installation, lysimeter installation for natural and contaminated ground-water, etc. Field visits to sites with contaminated aquifers undergoing remediation.

413-5 Geochemistry
Principles governing distribution of elements within the earth. Introduction to geochemical research methods. 3 hours lecture, 4 hours lab.

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.

420-3 Regional Tectonics
Study of the structure of the earth as revealed by solid earth geophysics and dynamics of internal geologic processes, and of the large-scale tectonic structure of the North American continent obtained through the Decade of North American Geology Project. Prerequisite: GL 311 or permission of the instructor.

421-3 Ground Water Law and Regulatory Principles
Case study approach to understanding current federal, state, and local ground water law and regulations.

422-5 Introduction to Applied Geophysics
(Also listed as see PHY 422.) Introduction to gravity, magnetic, seismic, and electrical methods of subsurface investigation. 3 hours lecture, 4 hours lab. Prerequisite: MTH 229 or permission of instructor.

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.

424-4 Gravity and Magnetic Exploration
(Also listed as PHY 424.) Study of the theory of earth’s gravitational and magnetic fields and the application of these principles to resource exploration. 3 hours lecture, 2 hours lab.

426-1 Geophysics Seminar
Literature survey and presentations by students on selected topics in geophysics. Prerequisite: GL 400 or 422.

427-4 Regional Structural Synthesis
Synthesis of diverse structural, geophysical, and remote sensing data and their application to regional tectonic interpretation and natural resource evaluation. Prerequisite: GL 311/511, 312/693.

428-0.5 to 2 Geology Colloquium
Selected geological topics discussed by students, guest speakers, and faculty. May be taken for letter grade or pass/unsatisfactory.

429-3 Rock Fractures and Fractured Reservoirs
Covers controls on inception and growth of rock fractures, elements of fractography and applications, characterization of fractures in outcrop and core, fractures as a reservoir anisotropy. Exercises include fracture logging in actual core. 2 hours lecture, 2 hours lab. Prerequisite: GL 311.

431-4 Electrical Methods in Environmental Geophysics
The principles and practices of acquisition and interpretation of data from electrical and electromagnetic geophysical techniques. Prerequisite: GL 422 or permission of instructor.

432-4.5 Sedimentary Systems and Sequences: Carbonates
Interpretation of ancient and modern carbonate systems using sequence stratigraphic principles. Carbonate facies models as predictive tools for hydrocarbon exploration and aquifer modeling. Composition, origin, and diageneisis of carbonate rocks. Prerequisite: GL 382 or 487 or equivalent.

433-1 to 6 Geophysical Field Research
Geophysical research participation in a project of the department. The content and techniques will depend on the particular project, but will normally have an extensive component of field data acquisition. May be repeated for credit. May be taken for a letter grade or pass/unsatisfactory.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>434-9</td>
<td><strong>Field Geology</strong></td>
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<td>Geologic phenomena illustrated in the field.</td>
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<td>Introduction of mapping techniques and application of many geological disciplines to geologic analysis.</td>
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<td>436-3</td>
<td><strong>Diagenesis of Sedimentary Rocks</strong></td>
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<td>Theory and application of petrographic techniques to studies of carbonate and clastic rocks, with emphasis on diagenesis and porosity development. Prerequisite: GL 487 or equivalent.</td>
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<tr>
<td>437-4</td>
<td><strong>Subsurface Digital Imaging and Processing</strong></td>
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<td>Digital processing and visualization of seismic reflection and ground penetrating radar data. 2 hours lecture, 4 hours lab. Prerequisite: GL 423.</td>
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<td>438-3</td>
<td><strong>Seismic Interpretation</strong></td>
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<td>Interpretation methods for seismic reflection data are studied with emphasis on structural and stratigraphic interpretation for petroleum traps. Prerequisite: GL 423 or permission of instructor.</td>
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<tr>
<td>439-1 to 6</td>
<td><strong>Applied Geophysics for Hydrology and Engineering</strong></td>
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<td>Geophysical principles, field techniques, and interpretation methods are applied to geological problems in hydrology and engineering. Emphasizes electrical resistivity and seismic refraction methods.</td>
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<tr>
<td>440-3</td>
<td><strong>Economic Geology</strong></td>
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<td>Genesis, classification, and description of economic metal-bearing mineral deposits.</td>
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<td>441-4</td>
<td><strong>Advanced Facies Analysis</strong></td>
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<td>Facies models as prediction tools in oil and gas exploration, interpretation of seismic 2D and 3D data, and resolving ground water and environmental problems in non-regolith aquifers. Prerequisite: GL 251, 253, 487 or equivalents, or permission of instructor.</td>
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<tr>
<td>444-4</td>
<td><strong>Formation Analysis</strong></td>
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<td>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.</td>
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<tr>
<td>445-4</td>
<td><strong>Petroleum Geology</strong></td>
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<td>Hydrocarbon source rocks, maturation, and migration. Reservoir rocks and traps. Fluids in the reservoir: gas, oil, water, and relationships. Exploration for and production of hydrocarbons. Review of major petroleum basins and deposits.</td>
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<td>446-3</td>
<td><strong>Sequence Stratigraphy</strong></td>
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<td>Provides a firm grounding in the mechanisms that produce sea-level change, how sediments respond to these changes, and how the architecture of basins develop over time.</td>
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<tr>
<td>450-4</td>
<td><strong>Hydrogeology</strong></td>
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<td>Provides a fundamental understanding of basic hydrological principles including ground water flow and chemistry, surface water hydrology, unsaturated flow, and meteorology. Students are expected to understand basic physics and calculus.</td>
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<tr>
<td>452-3</td>
<td><strong>Advanced Hydrogeology</strong></td>
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<td>Second-level course in hydrogeology that provides the theoretical background necessary to solve real-life problems involving ground water flow, well hydraulics, aquifer characterization, and contaminant transport. Completion of a calculus course required. Prerequisite: GL 450/650.</td>
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<tr>
<td>454-4</td>
<td><strong>Ground-Water Flow and Transport</strong></td>
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<td>Covers the occurrence and movement of ground water, and the advection and dispersion of contaminants in ground-water flow regimes. Lab introduces interpreting the hydraulic properties of ground-water flow regimes from field data. 3 hours lecture, 2 hours lab. Prerequisite: MTH 230, PHY 244.</td>
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<tr>
<td>455-4</td>
<td><strong>Hydrogeochemistry</strong></td>
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<td>Focuses on the chemical interactions between natural waters and their geologic environments. Included are chemical principles, carbonate system, silicate equilibria and weathering, redox reactions, isotope hydrology, and hydrogeochemical modeling. Prerequisite: CHM 121, 122, 123 or CHM 191, 192, 193.</td>
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<tr>
<td>456-4</td>
<td><strong>Engineering Geology I</strong></td>
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<tr>
<td></td>
<td>Principles of engineering geology—applications of geologic principles to engineering works. Impact and interrelationship of geologic processes on humans' construction efforts.</td>
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<tr>
<td>458-3</td>
<td><strong>Ground Water Management</strong></td>
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<td>Introduction to the basic principles of ground water management including case studies.</td>
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<tr>
<td>461-4</td>
<td><strong>Geologic and Environmental Applications of GIS</strong></td>
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<td>Introduces principles and essential elements of Geographic Information System (GIS). DRASTIC concept of ground water vulnerability to contamination is incorporated to illustrate data analysis, map algebra, and decision making using GIS. May be taken for a letter grade or pass/unsatisfactory.</td>
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<tr>
<td>462-4</td>
<td><strong>Process Geomorphology</strong></td>
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<td>Study of the processes that create and modify landforms. Classifications of landforms and what they reveal of past geologic processes and climates. Prerequisite: GL 251, 252, 253, 254 or GEO 201 and GEO 322.</td>
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<tr>
<td>463-4</td>
<td><strong>Geologic and Environmental Application of Remote Sensing - Aerial Photographs</strong></td>
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<tr>
<td></td>
<td>The use of aerial photographs for geological mapping, exploration of mineral resources, hydrogeology, hazard monitoring, environmental problems, and land use monitoring and analysis.</td>
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<tr>
<td>464-4</td>
<td><strong>Geologic and Environmental Applications of Remote Sensing - Satellite and Radar Imagery</strong></td>
</tr>
<tr>
<td></td>
<td>The use of satellite and radar imagery for geological mapping, exploration of mineral resources, hydrogeology, hazard monitoring, environmental problems and land use monitoring, and analysis. Prerequisite: GL 251, 253, 311, or permission of instructor.</td>
</tr>
</tbody>
</table>
468-4 Ground Water Contamination
Behavior of organic and inorganic pollutant in the vadose zone and saturated subsurface including: vapor migration, dissolution, and sorption of LNAPLs and DNAPLs; chemical and microbiological degradation, and fate of chlorinated and other hydrocarbons. Prerequisite: GL 450/650 or GL 455/655.

469-3 Site Remediation
Chemical and microbiological degradation of pollutants in subsurface. Diagnosis and assessment of contaminated sites. Concepts and techniques for LNAPL and DNAPL remediation: pump-and-treat, soil vapor extraction, bioventing/airsparging, chemical treatment, solvent extraction, and bioremediation. Prerequisite: GL 468/668.

470-4 Environmental Geochemistry
Introduction to environmental organic pollutants. Concepts in behavior of pollutants; vapor pressure, solubility, air-water and solvent-water partitioning, dissociation in water, and sorption to solids. Chemical and microbial degradation of organic pollutants. Modeling concepts. Prerequisite: GL 455/655 or GL 468/668.

474-3 X-Ray Spectral Analysis
(Also listed as ME 478.) Electron microprobe and X-ray fluorescence for analysis of rocks, minerals, and other substances explained and demonstrated on examples.

485-4.5 Stratigraphy
Principles, rules, and techniques of correlation. Relationships between surface and subsurface correlation. Geologic and geophysical correlation techniques, 3 hours lecture, 3 hours lab.

486-4.5 Invertebrate Paleontology
Morphology, geologic record, and geographic distribution of major invertebrate groups characterized by significant fossil representation, 3 hours lecture, 3 hours lab. Prerequisite: GL 255 and GL 256.

487-4 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. Prerequisite: GL 485.

491-4 Geology and Paleontology of the Northern Rockies
Three week field trip to the northern Rocky Mountains to be held following Summer B term. Participants will travel in vans, sleep in tents, and cook their own meals while visiting selected geological and paleontological sites. Instructor permission required. Prerequisite: Completion of or concurrent enrollment in GL 105, 106, 107, 115, 116 or GL 251, 252, 253, 254, 255, 256.

492-4 Geology of Southwestern United States
Two-and-a-half week field trip to the southwestern United States, possibly extending into Mexico, immediately following exam week of fall quarter. Participants will travel in vans, sleep in tents, and cook their own meals while visiting selected geological and paleontological sites. Instructor permission required.

495-3 Geochemical Surveying
Theory, techniques, and application of geochemistry to the exploration for economic mineral deposits including hydrocarbons.

499-0.5 to 6 Special Problems
Research problems for specific needs and talents of students. May be taken for letter grade or pass/unsatisfactory at the department's option.

German/GER
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.

111-4 Essentials of German
Introduction to German with an emphasis on speaking the language.

115-4 German for Reading Knowledge
Introduction to all main points of grammar; practice in recognizing grammatical constructions and using a dictionary; and selected readings of adult-level texts from various fields. May be taken for letter grade or pass/unsatisfactory.

150-4 German Grammar Review
A thorough review of German grammar with an emphasis on oral practice.

201-4, 202-4, 203-4 Second-Year German
Grammar review, reading, and discussion of selected texts with practice speaking and writing the language. Prerequisite: for 201, GER 103 or equivalent; for 202, GER 201 or equivalent; for 203, GER 202 or equivalent.

215-4 Scientific German
Intensive reading in all areas of expository and technical German. Prerequisite: GER 103 or equivalent.

311-4, 312-4 German Conversation
Emphasis on the culture of the German-speaking world. Prerequisite: GER 203 or equivalent.

321-4, 322-4 German Composition
Oral and written composition in German; translations from English into German. Further grammar study. Prerequisite: GER 203 or equivalent.
Course Descriptions

232-4 German Composition
Oral and written composition in German; translations from English into German. Further grammar study. Prerequisite: GER 203 or equivalent.

235-4 Business German
An introduction to the language of business-German with insight into Germany's place in the global economy. Prerequisite: GER 203.

331-4, 332-4 Survey of German Literature
Historical survey of German literature from its beginning to the present. 331: literature of the Middle Ages, Renaissance, Reformation, Enlightenment, and Storm and Stress. 332: Classicism, Romanticism, Poetic Realism, and Modern Period. Prerequisite: GER 312 and 322 or permission of instructor.

GER 312, 322, and 332 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
Survey of Germanic folklore as it relates to literature.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of German. Topics vary.

403-4 Advanced Studies: Language/Civilization
Topics vary. Conducted in German.

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 18th Century
415: representative authors in Rococo, Enlightenment, and 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 19th Century

431-4, 432-4, 433-4 German Literature of the 20th 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
Topics vary.

450-1 to 4 Undergraduate Research in German
Topics vary.

481-4, 482-4 Independent Reading for Advanced Students
Topics vary.

Greek/GR
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.

201-4, 202-4 Intermediate Greek
Review of essentials and reading for comprehension in selected authors. Prerequisite: GR 103 or equivalent.

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. GR 202 or equivalent is prerequisite for all 300- and 400-level language courses.

351-4 Readings in Greek Drama
Aeschylus, Sophocles, Euripides, Aristophanes, and Menander. Study of at least one play in Greek. Topics include origin and development of tragedy, drama as a reflection of contemporary events, and development of New Comedy.

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, and the Hellenistic poets. Topics for investigation include structure and technique of oral epic, the didactic tradition, lyric meters and diction, and the development of pastoral poetry.
399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of Greek. Topics vary.

451-4 Readings in Greek Philosophy
Plato, Aristotle, Epicurus, Epictetus, and Marcus Aurelius. Topics include pre-Socrates and the development of philosophical vocabulary, the sophistic movement, the Cynic tradition, and the development of popular philosophy. Titles vary.

453-4 Readings in Greek History and Biography
Herodotus, Thucydides, Xenophon, Polybius, and Plutarch. Topics for investigation include methods of composition, influences on historiography from the sophists and philosophers, the development of Greek historical writing, and supplemental evidence from inscriptions and nonliterary sources. Titles vary.

455-4 Readings in Greek Politics and Political Theory
Lysias, Demosthenes, Isocrates, Old Oligarch, Plato, Xenophon, and Aristotle. Topics for investigation include development of political ideas and vocabulary, nonliterary sources for our knowledge of Greek civil life, and influences on Roman theories and practices.

457-4 Reading in Greek Prose Narrative
Readings of Greek prose authors on topics such as the scientific or pseudoscientific writings of Hippocrates, Euclid, Archimedes, and Ptolemy; travel commentary of Strabo and Pausanias, essays of Athenaeus, and fiction of Lucian.

481-1 to 4 Independent Reading
Titles vary.

Health/HLT
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

416-1 to 4 Special Topics in Health
Topics vary. Specific titles announced in quarterly class schedule. May be taken for a letter grade or pass/unsatisfactory.

Health and Education/HED
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

330-3 School and Community Health Services
Discusses problems of chronic and communicable diseases, environmental health, world health, and the school and community agencies involved in their solutions through assessment, planning, implementing, and evaluating school health programs. (Previously listed as HPR 330.)

331-4 Health Education for Early and Middle Childhood
Covers students pre-K through 9th grade. Promoting positive lifestyles; the comprehensive school health program; planning, organizing, and evaluation of curriculum; goals and objectives for health teaching; teaching and learning plans; and controversial issues. (Previously listed as HPR 331.)

382-3 Curriculum and Methods in Health Education
Curriculum development (pre-K–12) in health education including: aims, objectives, implementation, evaluation, and unit planning. Provides criteria for the selection of specific health education content areas and teaching methods across the lifespan. Prerequisite: Admission to teacher education program or permission of instructor. (Previously listed as HPR 382.)

431-3 Human Sexuality for Educators
A course in human sexuality for health educators who deal with communication, sexual behavior, birth control, abortion, pregnancy, childbirth, premartial sex, ethics, homosexuality, marriage, divorce, parenting, sexual health, coercive sex, and sexual assault. (Previously listed as HPR 431.)

432-3 Death, Dying, and Grieving
(Also listed as RHB 432.) Course in death, dying, and grieving for health educators who deal with grief and loss in situations such as death, dying, survivorship, children and loss, second marriages, suicide, and other events of trauma. (Previously listed as HPR 432.)

Health, Physical Education, and Recreation/HPR
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

230-4 Personal Health
Discussions of personal health problems in adolescents through the lifespan including the six CDC risk areas of: injuries, tobacco, alcohol, drug use, sexual behavior that leads to pregnancy, STDs, diet, and physical activity. (Previously listed as HPR 230.)
241-3 Introduction to Health, Physical Education, and Recreation
Introduces the developing professional to the nature and scope of health, physical education, and recreation. Includes degree and licensure requirements, professional organizations, career opportunities, historical perspectives, trends and issues in HPR and related fields.

242-2 Problems in Health, Physical Education, and Recreation
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.

250-4 Basics of Anatomy and Physiology I
A study of anatomy and physiology correlating both structure and function of the human body. Topics include organization, skeletal system, muscular system, nervous system, circulatory system, and endocrine system. 3 hours lecture, 2 hours lab.

251-4 Basics of Anatomy and Physiology II
A continuation of HPR 250. Topics include respiration, exercise, digestion, metabolism, urinary system, acid base balance, reproduction, and immune system. Prerequisite: HPR 250.

260-3 First Aid

281-4 Physical Education for Early and Middle Childhood
Curriculum teaching methods and materials in physical education for early and middle childhood (ages 3–14). Emphasis on goals of effective programs, activity for optimal growth development, content areas, and principles for teaching motor skills.

303-3 Therapeutic Exercise
Methods of evaluating students and design of individual exercise programs for students with temporary or permanent physical limitations. Prerequisite: HPR 212.

310-4 Developmental Activities for Children
Movement activities that aid the developmentally delayed as well as the normal child in developing motor skills. Equipment and materials necessary to provide appropriate movement activities.

312-3 Motor Skills for Individuals with Multiple Disabilities
Sensory-motor skill development of individuals as it relates to perceptual enhancement, IFSP and IEP development, mobility skills, and vocational fitness from early childhood to adulthood. Intended for students in adapted physical education, early childhood education, special education, and related disciplines.
253-3 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. Includes scheduling, facilities, personnel, programs of instruction, and public relations. Prerequisite: HPR 241.

354-3 Psychology of Sport
Provides information to help the prospective teacher, coach, or sports medicine professional to effectively apply behavioral science principles to the performance aspects of sport and human movement.

355-4 Applied Exercise Physiology
Practical applications in exercise physiology for the physical educator, coach, and athletic trainer. Methods of conditioning, training, implementation, and other special considerations included.

360-3 Therapeutic Modalities in Athletic Training
The study and practical application of therapeutic modalities for the treatment of athletic injuries. Modalities may include superficial heat and cold, hydrotherapy, massage, traction, intermittent compression units, ultrasound, electrostimulation, and microwave and shortwave diathermy. Prerequisite: HPR 261.

362-3 Nutrition for Fitness and Sport
Nutrient and food energy needs of the individual who is physically active during the life cycle. Tissue maintenance, growth and development, immune function, energy development, the food pyramid, and sound dietary practices are investigated.

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 214, 216, 218, 220, 221, 223, 327 (ED 327 may be taken concurrently).

381-3 Curriculum and Methods in Physical Education
Curriculum development in pre-K physical education: aims, objectives, implementation, evaluation, teaching methods, daily and unit lesson planning. Self assessment and problem solving techniques allowed student to reflect upon and revise teaching practices. Prerequisite: Admission to teacher education program or permission of instructor.

383-3 Methods of Teaching Outdoor Activities
Designed to provide knowledge and practical application of teaching and leading outdoor activities related to the field of physical education and recreation. Prerequisite: ED 214, 216, 218, 220, 221, 223, 327 (ED 327 may be taken concurrently).

410-4 Psychomotor Assessment of Exceptional Children
Emphasis on developing knowledge and skill in diagnosing motor, physical, and sensory deficiencies in exceptional children. Administrative procedures and interpretation of numerous assessment instruments are covered. Prerequisite: HPR 212.

419-5 to 15 School Nursing Practicum
Supervised experiences in the public school. Prerequisite: HPR 440.

430-1 to 3 Coaching Theory
Theory, methods, skills, strategies, organization, psychology, ethics, conditioning, and general aspects of teaching and coaching a particular sport. Typical sports covered include baseball, basketball, and soccer.

440-3 School Health Services
Study of health services provided by our public schools, techniques for increasing students' knowledge of healthful practices.

460-4 Athletic Training II
Advanced problems found in the identification of injuries related to athletic participation. Prerequisite: HPR 261.

481-3 Research Methods in Physical Education
Introduction to basic research procedures in health, physical education, and recreation including a review of the statistical procedures pertinent to physical education. The format for thesis writing is also discussed. Prerequisite: BIO 456.

488-1 to 6 Independent Study
Independent reading, writing, and/or reporting in areas related to health, physical education, or recreation. Topics vary.

489-1 to 6 Workshop in Health, Physical Education, and Recreation
Intensive study of content, curriculum, method, or materials designed to meet the needs of preservice and in-service professionals in health, physical education, and recreation. Titles vary.

History/HST
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-3 The Western World: The Ancient and Medieval Eras
Examination of the character of the premorden world from prehistory through the fourteenth century with special attention to those aspects of ancient and medieval life that had the greatest effect on the development of Western society, politics, and culture.
102-3 The Western World in Transition: The 14th to 18th Centuries
Examination of the roots of the modern Western world emphasizing the revolution in economic, political, religious, and demographic realities that occurred between the 14th and 18th centuries. Prerequisite: HST 101.

103-3 The Modern Western World: The 19th to 20th Centuries
Examination of the nature and consequences of modernization—its failures, accomplishments, and problems with special attention to the phenomena that shaped the Western world of the 19th and 20th centuries. Prerequisite: HST 102.

199-1 to 4 Studies in Selected Topics
Problems, approaches, and topics in the field of history. Topics vary.

211-3, 212-3 American Civilization
Thematic survey of events, forces, groups, and individuals that contributed to and helped to shape American civilization on the North American continent. 211: colonial foundations to 1877. 212: 1877 to the present.

214-3, 215-3 African-American History
Survey of black people in American society from colonial slave trade to the present. 214: African roots to 1877. 215: Reconstruction to the present.

218-3, 219-3 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.

301-4 Research Seminar
Students will learn to use various research tools and techniques and become proficient in presenting their research in a form acceptable to the scholarly community. Prerequisite: HST 101, 102, 103, 211, and 212.

400-4 to 12 History Honors Project
May range from library research to field training.

405-4 Ancient History
Courses offered under this number examine selected problems in Roman history to the death of Constantine in A.D. 337. Topics vary.

410-4 The Middle Ages
Studies the decline of the Roman Empire to ca. 1450. Topics vary and can include European, Islamic, and Byzantine civilizations.

415-4 Medieval and Early Modern European History
Examines selected problems in European history from the late Middle Ages through the Counter-Reformation. Topics include the Renaissance and Reformation.

425-4 Modern European History
Examines selected problems in European history from the late Middle Ages through the Counter-Reformation. Topics include the Renaissance and the Reformation.

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). Topics vary.

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. Topics vary.

455-4 Latin American History
Courses offered under this number examine selected Latin American nations (e.g., Mexico), particular topics (e.g., Authoritarianism), and Colonial Latin America. Titles vary.

460-4 Southeast Asian History
Examines periods of history in nations located between China and India (e.g., Vietnam) or selected topics (e.g., nationalism). Titles vary.

465-4 East Asian History
Examines various periods of Chinese, Japanese, and other East Asian histories or special topics.

470-4 Early American History
Examines colonial, revolutionary, and early Republic periods of American history. Topics vary.

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. Topics vary.

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). Topics vary.

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. Topics vary.

490-4 Topics in African-American History
Examines topics drawing from the African-American experience; may include black ideology and leadership, racial tension in urban society, and the civil rights movement. Topics vary. Prerequisite: HST 211, 212; or HST 214, 215.

491-1 to 4 Independent Readings
Faculty-directed readings in a field of students' choice.

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. Topics vary.
498-4 Historiography (American or European)
Introduction to the work of representative historians and important theories of historical interpretation.

Human Factors Engineering/ HFE

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

195-2 Fundamentals of Industrial and Systems Engineering
Provides students with an overview of how engineers design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and energy.

300-0 Honors Program Seminar
An orientation course intended for juniors who have demonstrated exceptional academic ability and desire to conduct meaningful independent research or solve unique engineering design projects during their senior year. Meets five times during quarter. Graded pass/unsatisfactory.

301-4 Statistical Methods for Testing, Development, and Manufacturing I
Presentation of statistical techniques as applied to engineering testing, development, and manufacturing. Introduces and applies probability distributions, measures of association, inferences on responses and basic experimental design. Emphasizes application of statistical tools. Prerequisite: MTH 230 or equivalent.

302-4 Statistical Methods for Testing, Development, and Manufacturing II
Continuation of HFE 301. Focus on analysis techniques for multiple variables, including ANOVA and multiple regression, as applied to engineering testing, development, and manufacturing. Process analysis and improvement techniques presented, along with tools for reliability analysis. Prerequisite: HFE 301.

306-4 Human Factors in Engineering and Design
Introduction to the study of human factors in the design and operation of machine systems. Prerequisite: PSY 105, 110, and MTH 230.

307-4 Industrial Ergonomics
Introduction to the application of ergonomic principles to the industrial environment. Includes ergonomic planning and implementation, the work environment, NIOSH work factors, and workstation and equipment design. Prerequisite: HFE 306, ME 212.

431-3 Human Factors Engineering of Visual Displays
Introduction to the design of visual display systems. Topics include display technologies, human visual capacities, design of display parameters, and image quality metrics. Prerequisite: HFE 306, EE 321.

450-3 Human Factors Engineering Analysis Methods
Provides human factors engineering students access to a variety of engineering and behavioral analytic techniques critical to the study of work performance. Prerequisite: PSY 105, 110, STT 360.

451-4 Human Factors Engineering in Computer Systems Design
Theoretical paradigms in human-computer interaction and their application to interface design are examined. Emphasis is on advanced interface technologies, such as Multimodal input/output, hypertext, and knowledge-based systems. Prerequisite: CEG 220, STT 361, HFE 450.

456-2 Human Factors Engineering Laboratory
A stand-alone laboratory course structured to expose students to equipment and procedures used in human factors engineering research and design. Prerequisite: HFE 307.

465-4 Interactive Systems Modeling, Analysis, and Design
(Also listed as CEG 465.) Provide students experience in interactive real-time simulation, design, and implementation and evaluation of interfaces to simulations. The relevant topics are explored through application in supervisory control of complex, dynamic systems. Prerequisite: CEG 220 or any one of the following: CEG 221, 241, 242, or instructor permission.

471-4 Systems Performance Modeling
Study of quantitative techniques to analyze and predict systems performance. Topics include queueing models, system simulation, model validation, data collection, quantitative analysis of system performance, and system design evaluation. Prerequisite: HFE 450, STT 361.

472-3 Human Factors Engineering Design I
Segment one of the HFE senior design sequence. Practicum results in a conceptual design for the senior design project. The tutorial stresses human centered design principles. Prerequisite: HFE 471.

473-3 Human Factors Engineering Design II
Segment two of the HFE senior design sequence. Practicum results in a preliminary engineering design for the senior design project. The tutorial stresses principles of systems analysis and engineering. Prerequisite: HFE 472.

474-3 Human Factors Engineering Design III
Segment three of the HFE senior design sequence. Practicum results in the final engineering design and completion of the design project. The tutorial stresses application of HFE to systems design and industrial processes. Prerequisite: HFE 473.

476-4 Human Factors Engineering in Aerospace System Design
Application of human factors engineering concepts to aerospace systems design. Develops human factors engineering influence on aerospace system
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<tbody>
<tr>
<td>480-4</td>
<td>Engineering in Occupational Safety and Health</td>
<td>Discusses and demonstrates the role and responsibility of engineers in occupational safety and health related issues. Focuses on the applications of human factors engineering design principles as a proactive approach for controlling occupational injuries. Prerequisite: HFE 471.</td>
</tr>
<tr>
<td>481-3</td>
<td>Engineering Economy</td>
<td>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 229.</td>
</tr>
<tr>
<td>482-3</td>
<td>Operations and Facilities Design</td>
<td>Provides a fundamental understanding of techniques for the layout and organization of operations in modern production and service facilities. Prerequisite: ME 408 or equivalent, HFE 471 (corequisite) or equivalent or instructor permission.</td>
</tr>
<tr>
<td>499-1-5</td>
<td>Special Problems in Human Factors Engineering</td>
<td>Special topics in human factors engineering. Topics vary.</td>
</tr>
</tbody>
</table>

**Japanese/JPN**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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<tr>
<td>101-4, 102-4, 103-4</td>
<td>First-Year Japanese</td>
<td>Study of the vocabulary and structure of the Japanese language; practice in conversation, reading, and writing. Must be taken in sequence.</td>
</tr>
<tr>
<td>111-4</td>
<td>Essentials of Japanese</td>
<td>Introduction to Japanese with emphasis on speaking the language.</td>
</tr>
<tr>
<td>201-4, 202-4</td>
<td>Second-Year Japanese</td>
<td>Continued study of the Japanese language with practice in speaking, reading, and writing. Must be taken in sequence.</td>
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**Italian/ITA**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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<tr>
<td>101-4</td>
<td>First-Year Italian</td>
<td>Study of the vocabulary and structure of the Italian language; practice in conversation, reading, and writing. ITA 101, 102, 103 must be taken in sequence.</td>
</tr>
<tr>
<td>102-4</td>
<td>First-Year Italian</td>
<td>Study of the vocabulary and structure of the Italian language; practice in conversation, reading, and writing. ITA 101, 102, 103 must be taken in sequence.</td>
</tr>
<tr>
<td>103-4</td>
<td>First-Year Italian</td>
<td>Study of the vocabulary and structure of the Italian language; practice in conversation, reading, and writing. ITA 101, 102, 103 must be taken in sequence.</td>
</tr>
<tr>
<td>201-4</td>
<td>Second-Year Italian</td>
<td>Grammar review, reading, and discussion of selected texts with practice in speaking and writing the language. Prerequisite: ITA 103 or equivalent.</td>
</tr>
<tr>
<td>202-4</td>
<td>Second-Year Italian</td>
<td>Grammar review, reading, and discussion of selected texts with practice in speaking and writing the language. Prerequisite: ITA 201 or equivalent.</td>
</tr>
</tbody>
</table>

**Latin/LAT**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

Students who have studied Latin elsewhere should consult the Department of Classics for the appropriate course level. Placement and proficiency tests can be given.

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<tbody>
<tr>
<td>201-4, 202-4</td>
<td>Intermediate Latin</td>
<td>Review of essentials and reading for comprehension in selected authors. Prerequisite: LAT 103 or equivalent.</td>
</tr>
</tbody>
</table>

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.

<table>
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<tbody>
<tr>
<td>351-4</td>
<td>Readings in Roman Drama</td>
<td>Plautus, Terence, and Seneca. Study of at least one play in Latin. Topics include importance of Plautus and Terence for the reconstruction of Greek New Comedy, architecture of the Roman theatre, history of Roman tragedy, and the relationship of Seneca’s tragedies to his Stoic philosophy.</td>
</tr>
<tr>
<td>353-4</td>
<td>Readings in Roman Epic</td>
<td>Virgil’s Aeneid, Ovid’s Metamorphoses; Lucretius, Valerius Flaccus, and Silius. Topics include intent and structure of the Aeneid, history and development of Roman epic, structure and transitional devices in the Metamorphoses, and the nature of rhetorical epic.</td>
</tr>
<tr>
<td>355-4</td>
<td>Readings in Roman Poetry</td>
<td>Roman lyric and elegiac poetry; Virgil’s Eclogues; Catullus, Horace, Propertius, Tibullus, and Ovid. Topics include meters and style of Latin lyric, amatory tradition, and the influence of Hellenistic poetry.</td>
</tr>
</tbody>
</table>
357-4 Readings in Roman Satire
Horace, Juvenal, Persius, Petronius, and Martial. Topics include development of this peculiar Roman genre, fragments of Lucilius, satirical methods and techniques, satiric epigram, and satire as a source of information about Roman private life.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of Latin. Topics vary.

451-4 Readings in Roman Didactic Literature
Study of Roman philosophical and didactic literature: Lucretius, Virgil's Georgics, Cicero's philosophical essays, and Quintilian. Topics 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 and Biography
Sallust, Livy, Tacitus, and Suetonius. Topics include Roman historiographical tradition, family and political influences, evidence from nonliterary sources, and 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 include the nature of Roman political campaigns, selections from Roman constitutional law, information from inscriptions, and Augustus' Res Gestae.

481-1 to 4 Independent Reading

Law/LAW

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

350-3 The Legal Environment of Business
Legal environment in which business functions. Introduction to law and legal systems, civil law, and white-collar crime. Public law topics include government regulation. Private law topics include torts and contracts.

360-3 Legal Aspects of Business Organizations

370-3 Legal Aspects of Commercial Transactions
Legal environment in which commercial transactions are conducted. Sale of goods, commercial paper, and financing the sale in secured transactions. Personal property and consumer protection. International sales transactions.

420-3 Legal Aspects of Managing a Diverse Workforce
Employment discrimination is examined in the broader context of workforce diversity. Major federal laws, court cases, and changing demographics impose obligations and present opportunities for employers and employees.

477-1 to 4 Special Studies in Business Law
Reading or research in selected area of business law.

480-1 to 4 Special Topics in Law
Topics vary.

Liberal Arts/LA

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

199-1 to 2 Great Decisions
Faculty-led reading and discussion group centering on major foreign policy issues facing the United States. Topics vary.

201-2 Effective Career Planning
Assists students in developing academic major and career goals through identifying skills and interests and then researching appropriate options.

203-2, 205-4 Sophomore Cooperative Education
Work experience in a liberal arts discipline. Faculty supervise and evaluate learning that requires planned and approved learning objectives, oral and/or written reports, employer evaluation, and conference with faculty supervisor. 203 may be repeated three times; 205 may be repeated twice. Prerequisite: for 203, part-time work experience; for 205, full-time work experience.

303-2, 305-4 Junior Cooperative Education
Work experience in a liberal arts discipline. Faculty supervise and evaluate learning that requires planned and approved learning objectives, oral and/or written reports, employer evaluation, and conference with faculty supervisor. 303 may be repeated three times; 305 may be repeated twice. Prerequisite: for 303, part-time work experience; for 305, full-time work experience.

314-4 Research Methods in the Social Sciences
Develops 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: CS 141 or MIS 100 or equivalent.

401-2 Implementing Career Decisions
Assists students in their career/job search. Through research, analysis, and structured exercises, the participants learn effective job-seeking skills. Final results for students should include discovering, exploring, and locating satisfying job situations.
403-2, 405-4 Senior Cooperative Education
Work experience in a liberal arts discipline. Faculty supervise and evaluate learning that requires planned and approved learning objectives, oral and/or written reports, employer evaluation, and conference with faculty supervisor. 403 may be repeated three times; 405 may be repeated twice. Prerequisite: for 403, part-time work experience; for 405, full-time work experience.

490-1 to 6 Senior Project in Selected Studies
Intensive studies or work in a selected topic.

Linguistics/LI

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

371-4 Introduction to Historical and Comparative Linguistics
Principles of historical and comparative study of languages; introduction to Indo-European, Germanic, Romance, and Slavic philology.

399-1 to 4 Studies in Selected Subjects
Deals with problems, approaches, and topics in the field of linguistics. Topics vary.

Management/MGT

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

100-3 The World of Business and Administration
An introduction to the elements of the business environment and the major functions of business: management, marketing, manufacturing, human resources, finance, and accounting.

200-3 Elements of Management and Supervision
For undergraduate, nonbusiness students to acquire a basic understanding of the history, practices, and roles of managers in work organizations.

280-3 Special Topics in Management
Provides students in disciplines outside the College of Business with an understanding of selected topics in management. Topics and prerequisites vary.

All of the following courses require junior standing in addition to the listed prerequisites.

300-1 Business Integrity
Key ethics theories and professional development resources that constitute business integrity: domestic and international business cases analyzed with practical tools that strengthen individual moral awareness, judgment, character, and conduct and develop collective integrity-building skills.

301-3 Functions of Management
Essential functions and practices of management in organizations. Topics include planning, organizing, and controlling. Prerequisite: Junior status.

302-3 Management and Organizational Behavior
Introduction to the functions and practices of management with emphasis on behavior within organizations. Topics include planning, controlling, leadership, motivation, and individual differences.

321-3 Human Resource Management
Analysis of the human resources system; interrelationship of policy areas such as staffing, development, and utilization. Prerequisite: MGT 302.

410-3 Organizational Development
Focuses on development as a systematic, continuing process designed to improve an organization's ability to cope with change. Topics include anticipation of change, overcoming resistance, and intervention strategies. Writing intensive course. Prerequisite: MGT 321.

411-3 Leadership Studies
Focuses on advanced theoretical models and effective skills in developing managerial leadership in organizations; and leadership style assessments and structured programs for ongoing professional leadership development. Prerequisite: MGT 302.

412-3 Labor Relations
A comprehensive course that includes the following topics: the historical foundations of the American labor movement and contemporary industrial relations; the legal framework for industrial relations; and collective bargaining relationships—the players, structure, negotiations contract administration, and conflict management. Prerequisite: MGT 321.

422-3 Compensation Administration
A comprehensive analysis of the purpose, structure, and effectiveness of organizational compensation systems. Topics include: legal issues, job design, job analysis, job evaluation, direct pay systems, indirect pay systems, incentive pay systems, and compensation plan administration. Students develop a compensation plan for a simulated organization. Prerequisite: MGT 412.

424-3 Staffing the Organization
Introduction to the scientific, legal, and administrative issues associated with the selection, placement, and promotion of individuals by organizations. Topics include criterion development, test validation, job analysis, and recruitment. Prerequisite: MGT 321 and LAW 420.
473-3 Managing Conflict in Business
Conflict at work has positive and negative outcomes. Effectively managed, it strengthens relationships, while the converse destroys them. Basic theories provide foundation for practical applications of conflict resolution techniques in diverse work situations. Prerequisite: MGT 302.

474-3 Quality Business Practices
A domestic and global survey of best quality business practices and consulting processes. Examines team application of latest quality assessment and development tools to existing companies in order to accelerate transformation to quality organizations.

475-3 Small Business Management
Students will work in teams with small businesses to develop a business plan. They will look at marketing, finances, staffing, etc. needed to start a business or grow an existing business. This class provides excellent hands-on application of previous course work. Prerequisite: MGT 301, 302, MKT 301, 302, FIN 301.

477-1 to 3 Special Studies in Management
Reading or research in a selected field of management. Topics vary.

478-3 Honors: Independent Study in Management
Research in management for fulfillment of the Honors Program project requirement.

480-1 to 4 Special Topics in Management
Seminar in special topics such as organizational assessment, training and development, and personal career development. Topics vary.

481-3 to 6 Internship
A practical application that integrates academic learning with HRM or management work experiences. This linkage allows students to test their classroom learning in an organizational setting. Limited to HRM and management majors with senior status. Prerequisite: Permission of instructor.

485-3 International Management
Studies fundamental concepts of international management and examines cultural, institutional, behavioral, and management systems and their operation in the international sphere. Prerequisite: MGT 302.

490-3 Managing Technology and Environment
Examines concepts of technology and innovation, relationships among business organizations, technological development, and the natural environment. Topics include: technology transfer and procurement, mechanisms for environmental and technological assessment, and managing technological innovation.

491-3 Public Policy in the Business Environment
Relationship between business and government; the business environment and public policy, the corporate role in American society, and business social responsibility. Prerequisite: LAW 350.

492-3 Strategic Management and Organizational Policy
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.

495-3 Strategies for Human Resource Management
Integrated human resource management strategies. Students will work in groups to analyze human resource structures, policies, and programs in field situations. Prerequisite: LAW 420, MGT 422, 424. Open only to Human Resource Management seniors who have completed a majority of their major course work.

Management Information Systems/MIS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

100-4 Introduction to Computer-based Information Systems
Computer literacy, information processing fundamentals and terminology pertinent to using and developing computer applications. Students access database software and the Internet in the lab session. 3 hour lecture, 1 hour lab.

210-3 Business Data Structures
Abstract data types, data structures, and their implementation in C/C++ programs. Data structures covered include stack, queues, lists, trees, and graphs. Course requirements include designing and testing C/C++ programs for business applications. Prerequisite: CS 209; MTH 228.

All of the following courses require junior standing in addition to the listed prerequisites.

300-4 Introduction to Management Information Systems
Examination of management information systems from a user perspective. Emphasis on the system life cycle, including computer system analysis and design and the software development life cycle. Data base support used to build an information system. 3 hours lecture, 2 hours lab. Prerequisite: CS 205.

321-3 System Analysis Methodologies
Overview of the system analysis process. System analysis methodologies are presented through techniques that describe planning, process and data flow, data structure, and documentation techniques. Information gathering is explored. Prerequisite: MIS 300 or CS 208.
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322-3 Systems Design and Implementation
Concentrates on strategies and techniques for design and implementation of an information system. Students learn to develop design and implementation specifications and test plans for information systems. Prerequisite: MIS 321.

323-3 Management of IS Projects
Examines the process of managing and developing information systems projects. Topics include: project workload estimation, project planning, project management tools and strategies, change agent, ethics, and ensuring IS quality. Prerequisite: MIS 321.

400-3 Business Operating Systems
Review of computer architecture and system administration. Topics include processor management, concurrent programming, memory management, file system, network management, and system maintenance. Emphasis is on the system administration in business organizations. Prerequisite: MIS 210.

410-3 Business Database Processing
An introduction to business information retrieval. Topics include DBMS, architecture, data modeling, SQL, data warehouse, data mining, and database reengineering. Exposure to most widely used commercial DBMS such as Oracle, Informix, and DB2. Prerequisite: MIS 322.

420-3 Data Communications, Networks, and Distributed Processing
Familiarizes students with the background, concepts, proper application, and components of data communications, network design, and distributed information systems. Emphasis on the impact of communications technology on information systems. Prerequisite: MIS 300 or CS 208.

430-3 Decision Support Systems
Concentrates on the adaptive design process of building decision support systems (DDS) through integration of data and model bases for individual and organizational decision making. Emphasis is on requirements determination and evaluation phases. Prerequisite: MIS 321. MS 203.

477-1 to 4 Special Studies in Management Information Systems
Research in selected fields of management information systems. Topics vary.

478-3 to 6 Honors: Independent Study in Management Information Systems
Research in management information systems for fulfillment of the honors project requirement. Senior MIS majors only.

480-3 Special Topics in Management Information Systems
480-A AI/Expert Systems; 480-B Data Communications; 480-C Office Automation; 480-D Graphics; 480-E Distributed Processing; 480-F Management of IS; 480-G Database.

481-1 to 6 Internship in Management Information Systems
Faculty-supervised internship in management information systems. Students work on an information systems project in a firm or public agency and submit reports for completion of the course.

490-3 Information Systems Development Project
Provides students with experience in analyzing, designing, implementing, and evaluating information systems. Students work in teams to acquire practical experience with information systems development projects. Prerequisite: MIS 322, 410.

Management Science/MS
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

201-3 Introduction to Data Analysis
Discusses statistical methods used in analysis of business problems, theory and application of frequency distributions, and measures of central tendency and variability. Introduction to probability, expectation, probability distributions, sampling, and estimation. Prerequisite: MTH 127.

202-3 Introduction to Statistical Inference
The study of additional statistical methods used in analysis of business problems. Statistical estimation, hypothesis testing with both single and multiple populations, the study of categorical data, analysis of variance, and regression techniques. Prerequisite: MS 201.

203-3 Applied Statistical Methods for Business
Use of statistical and analytical techniques to aid in problem solving. Decision theory, forecasting, queuing theory, simulation and linear programming techniques. Prerequisite: MS 202, MTH 228.

All of the following courses require junior standing in addition to the listed prerequisites.

306-3 Introduction to Operations Management
Discusses the major management approaches used in the production of goods and services. Major topics include total quality management, project and materials management, and independent and dependent demand inventory systems. Prerequisite: MS 205 and MS 203.

331-3 Forecasting and Inventory Management
Explores fundamentals of demand forecasting and applications to the management of wholesale and retail inventories. Topics include time series analysis of forecasting economic order quantities, reorder points, and factors affecting inventory decisions. Prerequisite: MS 306.
Course Descriptions

340-3 Global Operations Management
Success in international business depends on efficient and effective operations in managing the global supply chain. This course covers important issues relating to global supply chain management and coordinating production plans across the world. Prerequisite: MS 306.

435-3 Quality Management
Examines concepts, objectives, and applications of quality management in production systems. Topics include the teachings of quality management leaders, concepts, and tools for process control and ISO 9000 standards. Prerequisite: MS 306.

437-3 Production and Inventory Control
Advanced course in techniques for production and inventory management. Topics include production planning, material requirements planning, capacity planning, and production activity control. Prerequisite: MS 306.

438-3 Just-In-Time Production Systems
Explores fundamental principles involved in the design of Just-In-Time Production Systems. Topics include total quality control, workplace design, pull systems, cellular manufacturing, and supplier partnerships. Prerequisite: MS 306.

439-3 Purchasing Management
Emphasis is on the techniques used in the management of the purchasing process for evaluating and selecting suppliers, determining the quantities to order, and selecting the type of contract. Prerequisite: MS 306.

450-3 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: MTH 228.

477-1 to 4 Special Studies in Management Science
Topics vary.

478-3 Honors: Independent Study in Management Science
Research in management science for fulfillment of the Honors Program project requirement.

480-3 Special Topics in Management Science

481-1 to 6 Internship in Management Science
Faculty-supervised internship in management science. Students work in a firm or public agency, participate in seminars, and submit reports for completion of the course.

490-3 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.

Marketing/MKT

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

All of the following courses require junior standing in addition to the listed prerequisites.

280-1 to 3 Special Topics in Marketing
Provides students in various disciplines with an understanding of selected topics in marketing. For nonbusiness students interested in the selected topic. Topics and prerequisites vary.

301-3 Principles of Marketing
Explores the structure and functioning of the American marketing system and surveys the economic and social determinants; cost, productivity, and efficiency; product, price, promotion, and distribution exchange elements; and marketing research and planning.

302-3 Marketing Management
Emphasis on experiential learning of strategies and skills related to understanding internal and external influences and marketing functions within the framework of marketing planning. Prerequisite: MKT 301.

302L-1 Marketing Management Lab
Develops business professionalism skills relevant to marketing management. Prerequisite: MKT 301.

303-3 Consumer Behavior
An understanding of the purchase decision processes of individuals and organizations. Examination of applicable theory, research findings, and concepts. Stresses conceptual models based on sources of influence. Prerequisite: MKT 302 with a grade of "C" or better.

356-3 Services Marketing
Explores the fundamental product, price, promotion and distribution issues that require special attention in the marketing of services and their related developed and emerging theories for effective implementation. Prerequisite: MKT 302.

366-3 Personal Selling and Sales Management
Emphasizes personal selling-marketing relationships, buyer motivation and behavior, selling strategy, and techniques of selling. Objectives, policies, and techniques of sales force management including financial and performance responsibilities and opportunities. Prerequisite: MKT 302 with a grade of "C" or better.

416-3 Product Management
Intensive study of the product development and management process with emphasis on techniques, procedures, concepts, and theory applications. Prerequisite: MKT 301, 302.
418-3 Price Management
Evaluation and application of existing and developing pricing techniques, procedures, concepts, and theories to simulated and real price management problems. Prerequisite: 9 hours Economics, 6 hours Accounting, and FIN 302, MKT 302 with a grade of “C” or better.

421-3 International Marketing
Analysis of the nature and scope of international marketing including its managerial and operational problems. Emphasis is on the role of environmental differences that influence marketing strategy. Prerequisite: MKT 02.

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 a 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.

444-3 Telemarketing
Strategic applications of the telephone in all facets of marketing with specific reference to its role in industrial and consumer direct response marketing. Legal environment and ethics of marketing by phone explored in depth. Prerequisite: MKT 302.

446-3 Promotional Marketing
Emphasizes advertising responsibilities including message strategy, media selection, creativity, budgets, and evaluation; direct marketing skills, including database marketing, mailing lists, media, creativity, and testing; sales promotion campaign strategies; and promotional integration. Prerequisite: MKT 302 with a grade of “C” or better.

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, MS 201, 202.

461-3 Principles of Retailing
Analysis of the performance of marketing functions at the retail level. Emphasis on institutional and competitive factors and management of the marketing mix as it relates to retail market segments. Prerequisite: MKT 302.

471-3 Industrial Marketing
Marketing of goods and services to industrial/commercial enterprises, governments, and other nonprofit institutions. Legal, ethical, and international issues are included. Prerequisite: MKT 302, 336.

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, LAW 350, FIN 302.

477-1 to 6 Independent Studies in Marketing
Readings or research in a selected field of marketing.

478-3 Honors: Independent Study in Marketing
Research in marketing for fulfillment of the Honors Program project requirement.

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, and forecasting. Topics vary.

481-1 to 6 Internship in Marketing
Faculty-supervised internship in retailing, marketing research, advertising, industrial selling, nonprofit sector marketing, or other areas of marketing. Requires monthly seminars and reports.

492-3 Marketing Planning
Final course to integrate the students’ work in marketing and to promote marketing problem-solving capabilities. Involves group preparation and presentation of a marketing plan. Prerequisite: Completion of majority of required marketing courses.

Mathematics/MTH
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

102-3 Elementary Algebra
Programmed beginning algebra. Sets, counting numbers, integers, rational numbers, equations in two variables, polynomials, factoring, fractions, and fractional and quadratic equations. At least Level 2 on math placement test and departmental approval required.

126-5 Intermediate Algebra
For students with little or no recent experience with topics beyond elementary algebra. Topics include factoring, algebraic fractions, linear equations and word problems, equations involving fractions, laws of exponents, radicals and principal roots, quadratic equations, equations involving radicals or exponents, and line graphs. Topics covered are the same as in MTH 127, but involve more practice of necessary skills. Prerequisite: MTH 102 or equivalent or at least level 3 on math placement test.

127-3 Accelerated Intermediate Algebra
Best suited for students who have recent experience with intermediate algebra, but require a review. Topics covered are the same as in MTH
126, but the pace is much faster. Prerequisite: Two units of high school algebra and at least level 3 on math placement test.

128-5 College Algebra
Best suited for 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. Prerequisite: MTH 126 or 127 or equivalent or at least level 4 on math placement test.

129-3 Accelerated College Algebra
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. Prerequisite: MTH 126 or 127 or equivalent or at least level 4 on math placement test.

130-5 Precalculus
Functions and graphs, polynomial and rational functions, conics, systems of equations, exponential and logarithmic functions, geometric series, binomial theorem. Prerequisite: MTH 126 or 127 or equivalent or at least level 4 on math placement test.

131-3 Trigonometry
Trigonometric and inverse trigonometric functions. Not for credit to students with credit for MTH 134. Prerequisite: MTH 130 or equivalent or at least level 5 on math placement test.

134-5 College Algebra II and Trigonometry
Combines the material of MTH 130 and 131 into a single course. Topics covered are the same as in those two courses. Not for credit to students with credit for MTH 130 and/or MTH 131. Prerequisite: MTH 128, 129, or at least level 5 on math placement test.

143-4 Quantitative Reasoning
Discovery of fundamental concepts and skills of quantitative reasoning by exploring real-world data from many disciplines. Data collection, organization, display, analysis, probability simulation, variation and sampling, and expected values. Students work with appropriate software and graphing calculators. Prerequisites: MTH 126 or MTH 127 or at least level 4 on the placement test.

145-3 Mathematics and the Modern World
An application of mathematics to modeling real-world problems from the behavioral, computational, managerial, and social sciences.

Includes such topics as graph theory, linear programming, probability, descriptive and inferential statistics, voting systems, game theory, population growth, computer algorithms, and codes and data storage. Prerequisite: MTH 126 or 127 or equivalent or at least Level 4 on the Math Placement test. Substitutions: MTH 143 or MTH 228 or MTH 229 and 230 or STT 264 and 265 or STT 160.

200-3 Accelerated Calculus I
This course and MTH 300 cover the material of MTH 229, 230, and 231 at an accelerated pace. Graded pass/unsatisfactory.

228-5 Calculus for the Management, Life, and Social Sciences
Functions, rates of change, limits, derivatives of algebraic functions, applications including maxima and minima, exponential and logarithmic functions, and indefinite and definite integrals with applications. Not for credit to students with credit for MTH 229 and 230. Prerequisite: MTH 128 or 129 or equivalent or at least level 5 on math placement test.

229-5 Calculus I
Conic sections, functions, limits, continuity, the derivative, derivatives of algebraic and trigonometric functions, and applications of the derivative. Prerequisite: MTH 131 or equivalent or at least level 7 on math placement test.

230-5 Calculus II

231-5 Calculus III
Applications of the definite integral, polar coordinates, and parametric equations. Infinite series, power series, and vector algebra in the plane and space. Prerequisite: MTH 230.

232-5 Calculus IV
Partial derivatives and 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, and Stoke's theorem. Prerequisite: MTH 231.

233-5 Differential Equations
Elementary first order equations, linear equations, linear systems, series solutions, Laplace transform, and applications. Uniqueness and existence theorems for solutions. Prerequisite: MTH 231.

243-4 Fundamental Mathematical Concepts I
Overview of mathematical topics from a perspective appropriate for early and middle childhood educators. Covers sets, functions, prenumeration and numeration concepts, properties of whole numbers, integers, and
rational numbers. 3 hours lecture, 1 hour lab. Prerequisite: MTH 143.

244-4 Fundamental Mathematical Concepts II
Overview of mathematical topics from a perspective appropriate for early and middle childhood educators. Covers irrational numbers, proportions, introductory geometry, construction, congruence and similarity, and concepts of measurement. 3 hours lecture, 1 hour lab. Prerequisite: MTH 243.

253-3 Elementary Matrix Algebra
Elementary course in matrix theory covering matrices, linear equations, determinants, linear transformations, eigenvalues, and eigenvectors. Prerequisite: MTH 230 or equivalent.

255-3 Linear Algebra
In-depth introduction to the basic concepts of linear algebra in real Euclidean n-space. Topics include Gaussian elimination, algebra of matrices, determinants, geometry of Euclidean space, subspaces, linear independence, basis, dimension and rank, and the Gram-Schmidt process. Prerequisite: MTH 231.

257-3 Discrete Mathematics for Computing
Discrete mathematics useful in computing. Emphasis on mathematical induction, recurrence relations, asymptotic behavior of functions, and algorithm analysis. Prerequisite: MTH 230, CS 142 or 241.

280-3 Introduction to Mathematical Proof
Basic notions of logic and techniques used in mathematical proof. Students gain experience in constructing proofs as they study basic notions from sets, relations, functions, algebraic structures, and the properties of real numbers. Prerequisite: MTH 231.

290-3 Writing in Mathematics
Explores four aspects of writing in mathematics: expository writing, explaining mathematical ideas; formal writing, making proofs intelligible; writing as a learning tool, clarifying ideas by putting them on paper; and informal writing. Prerequisite: MTH 255 and 280.

300-3 Accelerated Calculus II
Continuation of MTH 200. Graded pass/unsatisfactory. Prerequisite: MTH 200.

303-3 Differential Equations II
Examples of systems of differential equations, complex and repeated eigenvalues, solutions of systems, matrix exponential, qualitative behavior of first order equations, planar systems and stability, almost linear systems, and energy method. Prerequisite: MTH 233, 253.

306-3 Mathematical Modeling
Structure and properties of mathematical models. Size effects, dimensional analysis, graphical methods, comparative statistics, stability, optimization techniques, probabilistic models, and Monte Carlo simulation. Prerequisite: MTH 233, 253 or 355, or permission of instructor.

310-3 Issues in Science
(Also listed as BIO 310, CHM 310, GL 310, and PHY 310.) A writing-intensive course dealing with issues in science. Prerequisite: ENG 101, 102; a first-year science course.

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 255, and one of the following: CS 142, 241, CEG 220, EGR 153. For 317: MTH 233, 316, and MTH 253 or 355.

332-3 Complex Variables
Topics discussed include power series expansion, the formula of Cauchy, residues, conformal mappings, and elementary functions in the complex domain. Prerequisite: MTH 232.

333-3 Partial Differential Equations and Boundary Value Problems

343-4 Algebra and Functions for Middle School Teachers
Polynomial, exponential, logarithmic, rational, and trigonometric functions will be studied from a perspective appropriate for a teacher. Computing, programming, graphing, and data collection technology will be used. Prerequisite: MTH 128.

344-4 Problem Solving for Middle School Teachers
A framework and useful heuristics for solving problems. Visual thinking and reasoning, metacognition, problem-solving logs and summaries, problem solving individually and in groups. Prerequisite: MTH 244, 343.

345-4 Geometry for Middle School Teachers
Axioms, finite geometries, nonmetric and metric lengths, angles, area, volume, polygonal figures, and elementary curves. Prerequisite: MTH 244.

348-4 Concepts in Calculus for Middle School Teachers
An exploration and study designed to provide a conceptual understanding of differentiation and integration with examples of their diverse applications and their connections to algebra and geometry. Prerequisite: MTH 244, 343.

355-3 Advanced Linear Algebra
Covers vector spaces and subspaces, basis and dimension, linear transformations and matrices, eigenvalues and eigenvectors, and inner product spaces. Prerequisite: MTH 255.
381-3 Elementary Number Theory
- Divisibility properties of integers, prime numbers, congruences, the Chinese remainder theorem, quadratic reciprocity law. Möbius inversion formula, Euler \( \phi \)-function, other number-theoretic functions. Prerequisite: MTH 231 or junior standing.

399-1 to 5 Selected Topics
- Selected topics in mathematics. May be taken for letter grade or pass/unsatisfactory.

407-3 Optimization Techniques
(Also listed as CS 407.) Concepts of minima and maxima. Linear programming: simplex method, sensitivity, and quality. Transportation and assignment problems. Dynamic programming. Prerequisite: MTH 233, 253 or 255.

410-4 Theoretical Foundations of Computing
(Also listed as CS 410.) Turing machines; \( \mu \)-recursive functions; equivalence of computing paradigms; Church-Turing thesis; undecidability; intractability. Prerequisite: CS 466.

416-4 Matrix Computations
(Also listed as CEG 416.) Survey of numerical methods in linear algebra, emphasizing practice with high-level computer tools. Topics include Gaussian elimination, LU decomposition, numerical eigenvalue problems, QR factorization, least squares, singular value decompositions, and iterative methods. Prerequisite: MTH 253 or 355; and CS 142 or 241.

419-3 Cryptography and Data Security
(Also listed as CS 419.) Introduction to the mathematical principles of data security. Various developments in cryptography will be discussed, including public-key encryption, digital signatures, the data encryption standard (DES), and key safeguarding schemes. Prerequisite: MTH 253 or 255.

431-3 Real Variables I
- Functions, sequences, limits, continuity, differentiability, integration, and mean-value theorems. Prerequisite: MTH 280.

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, and the residue theorem. Prerequisite: MTH 232.

440-3 History of Mathematics
- Development of calculus from antiquity through Newton, Leibnitz, development of classical analysis; the rise of abstraction; set theory, algebra, and topology; modern analysis. Prerequisite: MTH 231, 451, 471.

446-4 Mathematical Modeling for Middle School Teachers
- An introduction to mathematical modeling by modeling real world problems individually and in groups. Focuses on working with the steps involved in modeling a real-life situation and understanding how modeling differs from simple problem solving. Prerequisite: MTH 344.

450-3 Discrete Algebraic Structures
- Introduction to several abstract algebraic structures and their models that are used in computer science. Examples include semigroups and finite-state machines, and groups and codes. Prerequisite: MTH 253 or 255 or equivalent.

451-3, 452-3 Introduction to Modern Algebra I, II
- Introduction to abstract algebraic structures including groups, rings, integral domains, and fields. Prerequisite: for 451, MTH 280 or 450; for 452, MTH 451.

456-3 Coding Theory
(Also listed as CEG 478, EE 478.) Examines the essentials of error-correcting codes and the study of methods for efficient and accurate transfer of information. Topics to be covered include basic concepts, perfect and related codes, cyclic codes, and BCH codes. Prerequisite: MTH 253 or MTH 355 (or equivalent).

457-3 Combinatorics
- Topics are permutations, combinatorics, generating functions, recurrence relations, and Polya's theory of counting. Prerequisite: MTH 231.

458-3 Applied Graph Theory
(Also listed as CS 458.) Introduction to methods, results, and algorithms of graph theory. Emphasis on graphs as mathematical models applicable to organizational and industrial situations. Prerequisite: MTH 231, and CS 142 or 241.

459-3 Combinatorial Tools for Computer Science
(Also listed as CS 459.) Introduction to some of the mathematical tools needed for an understanding of computer programming. The topics covered are summations, elementary number theory, combinatorial identities, generating functions, and asymptotics. Credit for MTH 457 recommended. Prerequisite: MTH 280.

471-3 Geometry
- Topics in foundations of Euclidean geometry, introduction to non-Euclidean and other geometries. Prerequisite: MTH 280.

472-3 Projective Geometry
- Projective and affine planes and spaces; change of coordinates; projective transformations; and conics. Prerequisite: MTH 231.
475-4 Differential Geometry
Calculus on Euclidean space frame fields, calculus on a surface, shape operators, and geometry of surfaces in Euclidean 3 space. Prerequisite: MTH 232.

476-4 Computer Graphics I
(Also listed as CEG 476.) The principles of the design, use, and understanding of computer graphics systems. Covers basic drawing techniques, line and polygon clipping, two- and three-dimensional transformations, segmentation, projections, and three-dimensional viewing. Graphics standards (GKS and PHIGS) and hardware are discussed. Each student will create a menu-driven, interactive graphics package capable of generalized three-dimensional viewing. Prerequisite: MTH 253 or 255, CS 400.

477-4 Computer Graphics II
(Also listed as 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.

480-3 Methods of Applied Mathematics: Geometric Methods
Basic mathematical tools for the description of physical systems in three-dimensional space: vector and tensor analysis, matrices, and curvilinear coordinate systems. Prerequisite: MTH 232, 253 or 255.

481-3 Methods of Applied Mathematics: Differential Equations
Solution methods for ordinary differential equations commonly arising in physics and engineering. Systems of equations, linear spaces, eigenvalue problems, Sturm-Liouville theory, and orthogonal functions. Additional topics selected from Bessel and Legendre functions, stability theory, Lapunov's methods, autonomous systems and the Poincare phase plane, and existence and uniqueness theorems. Prerequisite: MTH 233; MTH 355 or 480.

482-3 Methods of Applied Mathematics: Integral Methods
Use of integral transforms in the solution of differential and integral equations. Fourier series, Fourier and Laplace transforms and inverses, integral equations, and Green's functions. Prerequisite: MTH 332 or 434; MTH 355 or 480.

488-1 to 5 Independent Reading
Topics vary.

491-3 Undergraduate Mathematics Education Seminar
Detailed study of the connections within mathematics and between mathematics and school mathematics. May be taken for letter grade or pass/unsatisfactory. Prerequisite: MTH 432, or Senior standing and permission of instructor.

492-3 Undergraduate Mathematics Seminar
Detailed study of a single mathematics topic chosen by the student with the approval of the instructor. The student will present the results of the study in an expository paper submitted to the instructor, and also present them to a broader audience. Prerequisite: MTH 432 or 452 or senior standing and permission of instructor. Limited to mathematics majors except those in the statistics option. May be taken for a letter grade or pass/unsatisfactory.

499-1 to 5 Selected Topics
Selected topics in mathematics.

Mechanical and Materials Engineering/ME

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

199-3 Introduction to Engineering Design
Introduction to the principles and practice of mechanical and materials engineering design. Fundamental design philosophy using a hands-on approach, including topics such as safety, ethics, and product liability. Teamwork and communicated skills are stressed.

201-2 Computer-Aided Drafting
Basic techniques of computer-aided engineering drawing. Graphic primitives, drawing, editing, dimensioning, multiple views, hatching, drawing intelligence, and three-dimensional modeling. 1 hour lecture, 2 hours lab. Prerequisite: Completion of fundamental course in engineering drawing.

202-4 Engineering Graphics
Basic concepts of engineering drawing with applications to manual and computer-aided drafting: Multiview projections; sectional, auxiliary, and pictorial views; dimensioning; and intersections and developments.

212-4 Statics
Forces, resultants, components, equilibrium of particles, equilibrium of rigid bodies, centroids and centers of gravity, analysis of structures, friction, and moments of inertia. Prerequisite: MTH 231 and PHY 240.

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: ME 212, PHY 240.

220-3 Introduction to Manufacturing Processes
Fundamentals of manufacturing processes, materials, measurement and quality assurance,
casting processes, forming processes, material removal processes, joining processes, and other processes and techniques related to manufacturing.

313-5 Strength of Materials
Discusses axial and shear stresses and strains, bi-axial loading, torsion of circular shafts, shear and bending moment diagrams, deflection of beams, and column theory. 4 hours lecture, 2 hours lab. Prerequisite: ME 212, PHY 240, EGR 153.

315-4 Thermodynamics I
Classical thermodynamics with applications of the first and second laws to engineering systems. Prerequisite: PHY 244. Co-requisite: MTH 232.

316-4 Thermodynamics II
Concepts of availability and irreversibility; power and refrigeration cycles; thermodynamic relations; compressible flow; and mixtures and combustion. 3 hours lecture, 2 hours lab. Prerequisite: ME 315.

317-4 Fluid Dynamics
Study of fluid properties; fluid statics, one-dimensional compressible and incompressible flows; and flow of real fluids, flow measurement. 3 hours lecture, 2 hours lab. Prerequisite: ME 213, 315.

318-4 Heat Transfer
Principles that govern heat transfer in solids, fluids, vacuum, and at interfaces of solids and fluids. Laboratory experiments to illustrate these phenomena. 3 hours lecture, 2 hours lab. Prerequisite: ME 317.

370-4 Materials Engineering Science
Effect of atomic, molecular, and crystalline structure on the properties of materials with emphasis on electronic materials and ceramics; characterization of materials; and device fabrication. Prerequisite: CHM 122, PHY 244.

371-3 Structure and Properties of Engineering Materials
Effect of microstructure, phase equilibrium, and processing on properties of structural materials including metallic alloys, polymers, and composites. Prerequisite: ME 313, 370.

375-4 Thermodynamics of Materials
Application of classical thermodynamics to engineering materials. Heats of formation and reaction; behavior of solutions; free energy concepts; thermodynamic fundamentals of phase equilibria. Prerequisite: ME 315. Corequisite: ME 371.

376-3 Physical Metallurgy
Fundamentals of structure property relations in metals and alloys related to transformations and kinetics. Application to recovery and recrystallization, solidification, precipitation strengthening, and displacive transformations. Prerequisite: ME 375.

385-2 Metallography Laboratory
Preparation of metallographic specimens; use of the metallurgical microscope including the preparation of photomicrographs. Corequisite: ME 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: ME 385. Corequisite: ME 371.

405-4 Kinematics and Design of Mechanisms
Graphic, analytical, numerical, and symbolic techniques are used in the kinematic and dynamic analysis of machines. Computer-aided design of mechanisms is introduced. Emphasis on the application of these techniques to planar mechanisms. Prerequisite: ME 213.

408-3 Design Optimization
Concepts of minima and maxima; linear, dynamic, integer, and nonlinear programming; variational methods. Engineering applications are emphasized. Prerequisite: ME 213, MTH 253.

409-4 Aerospace Structures
Stress, deformation, and stability analysis of aerospace structures. Thin-walled members bending, torsion, and shear stresses calculation in multicell structures. Buckling of thin plates. Prerequisite: ME 313.

412-4 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: ME 313, MTH 233.

414-4 Mechanical Design I
Fundamental concepts in design for static strength, fatigue, and impact loading; application to selected mechanical components and systems. Prerequisite: ME 313.

415-4 Mechanical Design II
Design of mechanical elements such as springs, bearings, shafts, gears, clutches, brakes, and flywheels. Students conduct an individual design project. Prerequisite: ME 414.

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: ME 317.

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: ME 318.

423-4 Energy Conversion
Important new developments in energy conversion. Thermoelectric, photoelectric, thermionic, and electromechanical systems are studied. Prerequisite: ME 315.
430-4 Aeronautics
Aviation history. Standard atmosphere, basic aerodynamics, theory of lift, airplane performance, principles of stability and control, and astronautics and propulsion concepts. Prerequisite: ME 213, 315.

431-4 Aerospace Propulsion
Engine cycle analysis; combustion fundamentals; reciprocating engines, propellers; applications to turbojet, turbofan, turboprop, ramjet, SCRAM jet, and rocket engines. Prerequisite: ME 317.

432-4 Flight Dynamics and Control Systems

434-4 Computational Fluid Dynamics
Introduction to CFD methods; governing equations, PDEs, finite difference numerical methods, stability analysis, incompressible and compressible flows, subsonic to supersonic flows. Prerequisite: ME 317.

442-3 Vehicle Engineering
Develops students' abilities to derive and solve vehicle equations and introduces how dynamic analysis is used in vehicle design. Various performance criteria, control concepts, and HEVs will be studied. Prerequisite: ME 213.

444-4 Principles of Internal Combustion Engines
Thermodynamics of I.C. engines; combustion thermodynamics; friction; heat and mass losses; computer control of the modern fuel-injected I.C. engine. Prerequisite: MTH 232, ME 316, 317.

456-4 Introduction to Robotics
(Also listed as CEG 456, EE 456.) Introduction to the mathematics, programming, and control of robots. Topics include coordinate systems and transformations, manipulator kinematics and inverse kinematics, trajectory planning, Jacobians and control. Prerequisite: Senior standing and MTH 253; proficiency in Pascal, C, or FORTRAN programming.

458-4 Instrumentation and Measurement
Develops understanding in measurements, conveys the principles and practice for design of systems including uncertainty and signal reconstruction, and establishes the physical principles and techniques used to measure those quantities most important for applications. Prerequisite: EE 301 or equivalent.

460-4 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, and introduction to random vibrations. Prerequisite: ME 213, EE 321.

464-4 Mechanical System Modeling and Design
Teaches students how to model complex mechanical systems as a set of simple, linear or nonlinear components for the purpose of design. Students will be introduced to modern computational tools. Prerequisite: ME 213.

470-3 Failure Analysis
Engineering aspects of failure analysis, failure mechanisms and related environmental factors, and analysis of actual service failure. Prerequisite: ME 313, 371.

472-4 Structure and Properties of Engineering Polymers
Introduces polymers as engineering materials and covers fundamental concepts in polymer science and engineering. Includes polymerization processes, morphology and crystallinity, thermal transitions, viscoelasticity, rubber elasticity, aging, and contemporary issues in polymers. Prerequisite: ME 370.

475-3 High Temperature Materials
The design and use of high temperature superalloys, strengthening mechanisms, creep and fatigue, corrosion and oxidation, protective coatings, and alternative materials. Prerequisite: ME 376. Corequisite: ME 477.

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: ME 313, 371.

478-3 X-Ray Spectral Analysis
(Also listed as GL 474.) Electron microprobe and X-ray fluorescence for analysis of alloys and other materials explained and demonstrated on examples. 2 hour lecture, 1 hour lab. Prerequisite: ME 482.

479-4 Materials Corrosion
(Also listed as CHM 479.) Survey of principles of corrosion processes with application to metallic and nonmetallic materials. Principles of electrochemistry are included. Prerequisite: ME 315, 371. Corequisite: CHM 453.

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: ME 376.

483-3 Introduction to Ceramics
Ceramic and refractory raw materials and products; atomic structure and bonding; structure of crystalline phases and glasses; structural imperfections; diffusion in oxides; phase equilibria; and processing of ceramics. Prerequisite: ME 375.

484-4 Physical Ceramics
Processing, microstructure, and properties of ceramics; defect equilibria in oxides; thermal, optical, electrical, and mechanical properties of
ceramic materials; ceramics for special applications. 3 hours lecture, 2 hours lab. 
Prerequisite: ME 483.

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: ME 375.

486-4 Deformation Processing
Fundamentals of principal deformation processing systems including forging, extrusion, rolling, and sheet forming; material response and formability; and mechanics and analysis of selected processes. 3 hours lecture, 2 hours lab. Prerequisite: ME 371.

487-4 Machining
Fundamentals of machining with an emphasis on engineering models of machinability, chip formation, cutting forces and power, and lubrication. Introduction to numerical control machining. 3 hours lecture, 2 hours lab. Prerequisite: ME 371.

488-4 Powder Processing

489-4 Engineering Plastics: Materials, Processes, and Design
(Also listed as 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. Prerequisite: for 490: ME 316, ME 317, ME 371, ME 408, ME 414; for 491: ME 490.

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. Prerequisite: ME 376 and ME 386.

493-4 Materials Engineering Design II
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. Prerequisite: ME 492.

499-1 to 5 Special Problems in Mechanical and Materials Engineering
Special problems in advanced engineering topics. Topics vary.

Medical Technology/MT
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.
Enrollment in the following courses is limited to medical technology interns.

434-1 Introduction to Clinical Laboratory Science
Introduction to procedures and techniques related to clinical laboratory function.

435-2 Advanced Clinical Laboratory Science
Study of advanced methodology and instrumentation that may include computer applications, data management, research data collection, and statistical analysis.

436-5 Diagnostic Microbiology
Application of microbiological principles to diagnosis, infection, and resistance.

437-5 Methods of Diagnostic Microbiology
Laboratory experiments in diagnostic microbiology. Corequisite: MT 436.

438-5 Clinical Chemistry
Application of principles of biochemistry to the human in health and disease.

439-5 Clinical Laboratory: Biochemistry
Laboratory course using current clinical chemistry techniques for the analysis of human tissues and fluids.

440-4 Body Fluid Analysis
Study of body fluids covering the pathophysiology of their formation and nature, as well as the techniques of examination for diagnostic information.

441-2 Principles of Hemostasis
Course includes the study of the chemical responses of the blood vessels, platelet activation, and biochemical reactions following blood vessel injury that lead to clot formation and dissolution. Prerequisite: MT 442.

442-4 Hematology
Study of hematopoiesis, blood cell cytology, and clotting mechanisms of human blood.

443-4 Hematology Laboratory
Laboratory study of cellular elements of blood and hemostasis. Corequisite: MT 442.

444-3 Immunohematology
Immunology and genetics of human blood groups and types.

445-3 Immunohematology Laboratory
Study of immunology as applied to human blood isoantigens and isoa antibodies. Corequisite: MT 444.

446-2 Immunology
Study of antigens and antibodies with emphasis on in vivo and in vitro reactions.
### Course Descriptions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>447-3</td>
<td>Laboratory Immunology: Serology</td>
<td>Study of detection and measurement of antigens or antibodies using in vitro systems.</td>
</tr>
<tr>
<td>448-2</td>
<td>Clinical Pathology Correlation</td>
<td>Correlation of clinical laboratory findings with different human physiological states.</td>
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<tr>
<td>449-2</td>
<td>Clinical Pathology Seminar</td>
<td>Presentation and discussion of topics in clinical laboratory medicine.</td>
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<tr>
<td>450-1.5</td>
<td>Pediatric Clinical Laboratory</td>
<td>Study of basic analytical techniques applicable to the examination of pediatric body fluids and tissues.</td>
</tr>
<tr>
<td>452-3</td>
<td>Advanced Diagnostic Hematology</td>
<td>Course is an in depth study of erythrocytic and leukocytic disorders including the morphologic classification and pathophysiologic mechanisms of the anemias, hemoglobinopathies, leukemias, and other malignant and nonmalignant blood cell disorders. Prerequisite: MT-442.</td>
</tr>
<tr>
<td>454-2</td>
<td>Advanced Immunohematology</td>
<td>Studies current theory and practices related to blood transfusion therapy. Emphasizes concepts of quality assurance and the role of regulatory agencies. Prerequisite: MT-444.</td>
</tr>
<tr>
<td>456-3</td>
<td>Advanced Diagnostic Microbiology</td>
<td>Studies species of fungi, mycobacteria, anaerobic bacteria, mycoplasmas, spirochetes, chlamydiae, rickettsiae, and viruses that are pathogenic for humans. Covers organisms' characteristics, clinical disease manifestations, habitat and transmission, mechanisms of pathogenesis, treatment, and disease prevention. Prerequisite: MT-436.</td>
</tr>
<tr>
<td>458-3</td>
<td>Advanced Clinical Chemistry</td>
<td>Studies basic physiology, analytical procedures, and clinical correlations of disease syndromes and pathogenic conditions associated with the endocrine gland, hormonal disorders, gastrointestinal dysfunction, inborn errors of metabolism, and/or mineral deficiencies. Prerequisites: MT 438.</td>
</tr>
<tr>
<td>426-3</td>
<td>Immunology and Basic Virology</td>
<td>Study of the fundamentals of immunobiology and basic virology, emphasis on the regulatory and cellular level of host immune responses against microbial pathogens as well as mechanisms of immunopathology, and on the characteristics and molecular biology of virus pathogens. Prerequisite: BIO 252, CHM 216, or departmental approval.</td>
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<tr>
<td>427-3</td>
<td>Pathogenic Microbiology</td>
<td>Study of microorganisms pathogenic for humans and animals using the organ system approach with emphasis on mechanisms of pathogenesis and host resistance. Prerequisite: M&amp;I 426, BIO 252 or 402, CHM 216, or departmental approval.</td>
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<tr>
<td>428-3</td>
<td>Principles of Laboratory Medical Microbiology and Immunology</td>
<td>Identification of etiological agents of disease. Emphasis on identification of bacteria, fungi, and viruses using cultural and immunological methods. Prerequisite: BIO 252, 402, CHM 216; or departmental approval. Corequisite: M&amp;I 426.</td>
</tr>
<tr>
<td>431-3</td>
<td>Basic Virology</td>
<td>Introduction to the field of virology: plant, animal, and bacterial viruses. Emphasis on the intrinsic properties of viruses and their interaction with cells, multiplication, genetics, and tumor induction. Prerequisite: BMB 421, BIO 402, or permission of instructor.</td>
</tr>
<tr>
<td>437-6</td>
<td>Recombinant DNA Methods Laboratory</td>
<td>Microbial and molecular techniques for producing, cloning and characterizing recombinant DNA molecules; laboratory exercises in gene manipulation to give an understanding of the principles of genetic engineering. Prerequisite: BIO 210, 211, 410 or permission of instructor.</td>
</tr>
<tr>
<td>445-5</td>
<td>Immunobiology</td>
<td>Study of biology of the immune system in terms of current concepts of antibody formation and function. Acquired, delayed, and immediate hypersensitivities are studied with respect to immunological deficiencies, malignancy, tolerance, graft rejection, infection, and acquired resistance. 4 hours lecture, 1 hour recitation. Prerequisite: M&amp;I 426, BIO 402, or permission of instructor.</td>
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<tr>
<td>462-3</td>
<td>Immunology</td>
<td>Study of the immune system with emphasis on basic molecular and cellular mechanisms and applications to human disease. Prerequisite: BIO 112, 114, 115, or permission of instructor.</td>
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<tr>
<td>488-1 to 4</td>
<td>Independent Reading</td>
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<tr>
<td>499-1 to 4</td>
<td>Special Problems in Microbiology</td>
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</tbody>
</table>

### Microbiology and Immunology/ M & I

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

| 220-5       | Microbiology of the Human Environment                        | Biology of viruses, bacteria, fungi, protozoa, and helminths as related to their natural environments and host-parasite interaction. Introductory course for students in environmental health, nursing, and patient-oriented para-medical health professions. 4 hours lecture, 2 hours lab. Prerequisite: BIO 105 or equivalent, CHM 101 or 102. |

### Military Science/MIL

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.
111-1 Introduction to Military Science
Introduction to customs, courtesies, doctrine, and organization of the U.S. Army, and policies affecting deployment of land forces. (Previously listed as MIL 113.)

112-1 Leadership I
Introduction to leadership emphasizing fundamentals and principles of leadership, characteristics of a group, and traits of a leader. (Previously listed as MIL 111.)

113-1 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. (Previously listed as MIL 112.)

211-1 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 Map Reading
Hands-on approach to the fundamentals of military map reading. Emphasis on identification of terrain features, using grid systems, plotting locations, measuring distances, intersection, resection, and graphic representation.

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.

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 physical training 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. 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. 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.

413-2 Military Justice and Counseling
Study of selected leadership and management problems within the military justice system. Introduction to the counseling obligations and responsibilities of an officer. Requires participation in weekend training exercises and a physical fitness program.
2 hours conference, 1 hour lab. Prerequisite: MIL 411, 412, or permission of instructor.

450-1 Current Military Events
Independent study project on selected recent or current events that impact on US Army operations, doctrine, structure, planning, or organization. A detailed presentation, causes, actions, and results of a selected topic. Prerequisite: MIL 411, 412, and 413.

Modern Language Humanities/ML
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

301-4 French Culture
Study of French culture according to language distinctions with emphasis on the uniqueness within the family of nations.

302-4 Germanic Culture
Study of German culture according to language distinctions with emphasis on the uniqueness within the family of nations.

303-4 Spanish Culture
Study of Spanish cultures according to language distinctions with emphasis on the uniqueness within the family of nations.

304-4 Spanish-American Culture
Study of Spanish-American culture according to language distinctions with emphasis on the uniqueness within the family of nations.
305-4 Russian Culture  
Study of Russian culture according to language   
distinctions with emphasis on the uniqueness   
within the family of nations.

306-4 Brazilian Culture  
Brazilian film, music, and literature are studied in their historical context, reflecting Brazilian society   
and politics.

311-4, 312-4, 313-4, 314-4, 315-4, 316-4 Literature in Translation  
Selected works of foreign literature studied in   
English translation. 311: French literature. 312:   
German literature. 313: Russian literature. 314:   

369-3 Children's Literature for Teachers of Foreign Languages  
Reading and discussion of children's books in   
modern languages (French, Spanish, German, and   
Russian) and reading informational books about   
the countries where the languages are spoken.   
Prerequisite: SPN 202 or FR 202 or RUS 202 or   
GER 202.

399-1 to 4 Studies in Selected Subjects  
Problems, approaches, and topics in the field of   
modern languages. Topics vary.

Motion Pictures/MP

Note: See quarterly class schedule or departmental   
advisor for further enrollment restrictions,   
requirements, or special course information.

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.

231-3 History of the Motion Picture I  
Historical development of the art of the film from   
nineteenth-century scientific experiments through   
the 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 the 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.

253-3 Basic Video Production  
(Also listed as COM 253.) Introduction to the use   
of video production equipment, including lecture,   
demonstration, and experiential approaches.   
Appropriate laboratory time provided in television   
studio. Prerequisite: COM 152, or permission of   
instructor.

281-3, 282-3, 283-3 Intermediate Film Production  
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, MP 180; for 282, MP 281; for 283, MP 282.

331-3 Studies in Film History  
Provides intensive study of selected areas of film   
history. Titles vary.

332-3 Studies in Film Authorship  
Provides an intensive study of the work of one or   
more film directors or other creative personnel,   
such as screenwriters or producers. Titles vary.   
Prerequisite: MP 131 or permission of instructor.

333-3 Studies in Film Genre  
Provides an intensive study of a film genre (e.g.,   
the western, the musical, and the gangster film).   
Titles vary.

334-3 History and Theory of the Documentary Film  
Comprehensive survey of the history of   
documentary film and an introduction to the   
thories and approaches used by documentary   
filmmakers throughout this century. Prerequisite:   
MP 131.

381-5, 382-5, 383-5 16mm Film Production  
Production of 16mm film projects under faculty   
supervision including budgeting, financing, and   
production. Emphasis on the documentary,   
business, and industrial film within the free-lance   
16mm market. Prerequisite: for 381, MP 283; for   
382, MP 381; for 383, MP 382.

399-1 to 4 Studies in Selected Subjects  
Problems, approaches, and topics in the field of   
motion pictures. Topics vary.
Independent Screening
Independent screenings of twenty-five films chosen by the student to comprise an integrated program of historical/theoretical focus. Screenings to be accompanied by the reading of appropriate analytical commentary under the direction of faculty member. Prerequisite: MP 231, 232, 233, two 300-level film theory courses.

Independent Study in Film History, Theory, Criticism, and Practice
Independent work to culminate in thesis and/or film. Prerequisite: MP 332, 333.

Applied Music/MUA

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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 1 or 2 credit hours per quarter at the undergraduate level, depending on the level of proficiency demonstrated by the student. All students must receive departmental approval before registering in applied music.

110-1 Applied Music
Applied music instruction is available to the general student, regardless of major. Section number designates applied area. Audition required. Half-hour lesson only. Enrollment limited. Department permission required.

111-1, 112-1, 113-1 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 112, MUA 111; for 113, MUA 112.

121-2, 122-2, 123-2 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 122, MUA 121; for 123, MUA 122.

141-4, 142-4, 143-4 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 142, MUA 141; for 143, MUA 142.

211-1, 212-1, 213-1 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 211, MUA 113; for 212, MUA 211; for 213, MUA 212.

221-2, 222-2, 223-2 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 221, MUA 123; for 222, MUA 221; for 223, MUA 222.

241-4, 242-4, 243-4 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 241, MUA 143; for 242, MUA 241; for 243, MUA 242.

311-1, 312-1, 313-1 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 311, MUA 213; for 312, MUA 311; for 313, MUA 312.

321-2, 322-2, 323-2 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 321, MUA 223; for 322, MUA 321; for 323, MUA 322.

341-4, 342-4, 343-4 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 341, MUA 243; for 342, MUA 341; for 343, MUA 342.

411-1, 412-1, 413-1 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 411, MUA 313; for 412, MUA 411; for 413, MUA 412.

421-2, 422-2, 423-2 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 421, MUA 323; for 422, MUA 421; for 423, MUA 422.

441-4, 442-4, 443-4 Applied Music
Open only to music majors or minors. All students must have auditioned for and have received departmental approval before registering for applied music. Prerequisite: for 441, MUA 343; for 442, MUA 441; for 443, MUA 442.

Music/MUS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-3, 102-3, 103-3 Theory of Music
Theoretical study of music including written exercises, form and analysis, and harmony. Corequisite: MUS 151, 152, 153.
111-1, 112-1, 113-1 Vocal Technique and Diction
Vocal English and Italian diction taught with an emphasis on the IPA phonetic language. Discussion and development of vocal technique, terminology, and anatomy. Prerequisite: for 112, MUS 111; for 113, MUS 112.

114-3 Fundamentals of Music Theory
Study of basic materials, notation, and reading of music for students with little or no previous music training.

117-3 Music Listening IV: Jazz
Historical survey of jazz and related styles from the late 19th century to the present.

118-3 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.

121-3 Foundations of Analytical Listening
Aural analysis taught via musical examples from various periods and cultures including non-Western and popular music.

122-3 Survey of Musical Styles
Principal types of Western music from ca. A.D. 500 to the present. Aural analysis; forms and styles. Prerequisite: MUS 121.

125-1 Beginning Piano I
For non-music majors, class instruction in basic keyboard skills, rudiments of music theory, and beginning sight reading.

126-1 Beginning Piano II
Continuation of MUS 125. Development of additional keyboard skills. Study of melody, harmony, and rhythm. Prerequisite: MUS 125.

127-1 Beginning Piano III
Continuation of MUS 126. Performance of simple music and application of knowledge of musical elements through performance. Prerequisite: MUS 126.

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.

141-2, 142-2, 143-2 Singing in Musical Theatre
Basic music and interpretation of notation. Vocal training with emphasis on musical theatre. For theatre majors only.

145-1, 146-1 Voice Class

151-1, 152-1, 153-1 Sight Singing and Dictation
Corequisite: MUS 101, 102, 103.

155-1, 156-1, 157-1 Keyboard Musicianship
Class instruction in functional keyboard skills including technique, chord construction and connection, improvisation, harmonization, playing by ear, sight reading, score reading, ensemble playing, and performing repertoire pieces. Prerequisite: for 156, MUS 101, 155; for 157, MUS 102, 156. Corequisite: for 155, MUS 101; for 156, MUS 102; for 157, MUS 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. Prerequisite: MUS 103, 153. Corequisite: MUS 251, 252, 253.

214-3 Music in Western Culture
Introduction to the music of Western culture from the Middle Ages to the present. Emphasis on listening skills: elements of music: major styles, genres, and composers; and cultural context.

215-1, 216-1, 217-1 String Instruments
Class instruction. Materials and pedagogy.

223-3 Methods in Music: Marching Bands
Materials, techniques, and administration of marching bands in the public school.

224-1, 225-1, 226-1 Brass Instruments
Class instruction. Materials and pedagogy.

227-1 Clarinet/Saxophone Methods
Study of materials, equipment, performing, and pedagogy.

228-1 Flute Methods
Study of materials, equipment, performing, and pedagogy.

229-1 Oboe/Bassoon Methods
Study of materials, equipment, performing, and pedagogy.

231-1 Percussion Instruments
Class instruction. Materials and pedagogy.

251-1, 252-1, 253-1 Sight Singing and Dictation
Continuation of MUS 151, 152, 153. Prerequisite: MUS 103, 153. Corequisite: MUS 201, 202, 203.

255-1, 256-1, 257-1 Keyboard Musicianship
Class instruction in functional keyboard skills, Continuation of MUS 157. Prerequisite: for 255, MUS 103, 157; for 256, MUS 201, 255; for 257, MUS 202, 256. Corequisite: for 255, MUS 201; for 256, MUS 202; for 257, MUS 203.

261-2, 262-2 Pronunciation of Foreign Languages
For students of singing. Application of the International Phonetic Alphabet to German and French. Includes intensive readings of song lyrics.
281-1 Jazz Improvisation I
Basic fundamental scales and principles associated with the jazz tradition. Includes the study and performance of the blues, minor pentatonic, minor seventh, and major scales.

282-1 Jazz Improvisation II
Study and performance of the cycle of fifths through technical jazz exercises designed to complement the highly syncopated rhythms and non-diatonic melodies found in the music of the Bebop era. Prerequisite: MUS 281.

283-1 Jazz Improvisation III
Introduces popular jazz riffs that have become standard practice among jazz artists of all periods and focuses on grace notes, diminished scales, diminished whole-tone scales, and transcribed jazz solos. Prerequisite: MUS 282.

284-1 Advanced Jazz Improvisation
Introduces both the technical and psychological artistic approach to sound production relating to jazz music and examines important recordings from various periods of jazz history. Prerequisite: MUS 283.

301-3 Baroque Counterpoint
Prerequisite: MUS 203, 253.

302-3 Renaissance Counterpoint
Prerequisite: MUS 203, 253, 316-3

311-3, 312-3, 313-3 History of Music
From ancient and medieval periods through the 20th century. Prerequisite: MUS 103, 122, 153.

314-3 Introduction to Research in Music
Methods of scholarly investigation in music history, theory, and education; music bibliography; emphasis on individual projects and reports. Prerequisite: MUS 122.

316-3 Piano Pedagogy I
History of piano pedagogy. Overview of the teaching and learning process. Study of methods and materials for use with students of various age groups during their first years of piano studies. Prerequisite: MUS 103, 122, and 153 or permission of instructor.

317-3 Piano Pedagogy II
Investigation of individual and group procedures for teaching, rhythm, music reading, pianistic technique, elementary improvisation, and artistic expression. Discussion of repertoire and methodologies. Prerequisite: MUS 316 or permission of instructor.

322-3 Methods in Music: Choral Ensembles
Survey of choral literature appropriate for junior/senior high school ensembles with procedures for rehearsal and performance, curriculum development, and administration of choral programs. Prerequisite: MUS 203, 253.
Corequisite: MUS 337.

323-3 Methods in Music: School Bands and Ensembles
Administration, techniques, materials, and problems; class instruction in the public school. Prerequisite: MUS 203, 253.

324-1 Methods in Music: String Instrument Techniques in the Public School Orchestra
Classroom instructional techniques, materials, and problems in the public school orchestra program. Prerequisite: MUS 203.

328-3 Music in the Elementary School
Materials, techniques, organization, and administration of vocal and general music programs in the public school. Reading components and teaching strategies included. Prerequisite: MUS 203, 253.

329-3 Music in the Junior High School
Materials, techniques, general music program, curriculum, and changing voice. Reading components and teaching strategies included. Prerequisite: MUS 203, 253.

331-3 Music Literature: Medieval
Historical study of music of the fifth century to ca. 1450. Emphasis on analysis, theoretical and stylistic concepts, and performance practice. Prerequisite: MUS 203, 313.

332-3 Music Literature: Renaissance
Historical study of music from ca. 1450 to 1600. Emphasis on analysis, theoretical and stylistic concepts, and performance practice. Prerequisite: MUS 203, 313.

333-3 Music Literature: Baroque
Historical study of music from 1600 to 1750. Emphasis on analysis, theoretical and stylistic concepts, and performance practice. Prerequisite: MUS 203, 313.

335-1 Basic Conducting
Basic baton technique and score reading for choral and instrumental conducting. Includes a laboratory ensemble. Prerequisite: MUS 122, 202, and 252.

336-2 Intermediate Conducting
Intermediate baton technique and score reading for choral and instrumental conducting. Prerequisite: MUS 122, 203, 253, and 335.

337-3 Advanced Choral Conducting
Continuation of MUS 336. Emphasis on rehearsal techniques, comprehensive musicianship, and performance practices. For music majors only. Completion of choral laboratory ensemble required. Prerequisite: MUS 336.

338-3 Advanced Instrumental Conducting
Continuation of MUS 336. Emphasis on rehearsal techniques, comprehensive musicianship, and performance practices. For music majors only. Completion of instrumental laboratory ensemble required. Prerequisite: MUS 336.
342-3 Form and Analysis
Harmonic and formal analysis: motive, phrase, periods, and binary and ternary forms.
Prerequisite: MUS 203, 253.

343-2 Orchestration
Tone quality and ranges of orchestral instruments; voice qualities and ranges of choral ensembles; and written assignments in each area. Prerequisite: MUS 203, 253.

365-4 Methods and Materials for Teaching General Music in Grades K-6
Materials and methods for teaching general music in grades K-6. Laboratory session required in addition to regular class meeting times for the purpose of developing skills in sight singing and in the use of traditional classroom instruments.

371-3, 372-3, 373-3 Composition
Creative writing in smaller forms for a variety of media. Includes the exploration of various composition styles. Prerequisite: for 371, MUS 203.

381-3, 382-3, 383-3 Electronic Music Composition
Composition using electronically generated and manipulated sounds. Includes a historical survey of styles and an exploration of tape and synthesizer techniques. Prerequisite: for 381, MUS 373.

391-3 Music of African Americans 1619 to Present
Survey of African American music from the 17th century to the present, including its creators, styles, and influences.

402-3 Form and Analysis
Contrapuntal techniques, rondo, sonata-allegro forms. Prerequisite: MUS 342.

403-3 Form and Analysis
Contrapuntal techniques and analysis of 20th-century music. Prerequisite: MUS 203, 253, 313.

411-3 Music Literature: Classical
Historical study of music from 1730 to 1830. Emphasis on analysis, theoretical and stylistic concepts, and performance practice. Prerequisite: MUS 203, 313.

412-3 Music Literature: 19th Century
Historical study of music from 1820 to 1900. Emphasis on analysis, theoretical and stylistic concepts, and performance practice. Prerequisite: MUS 203, 313.

413-3 Music Literature: 20th Century
Historical study of music from 1900 to the present. Emphasis on analysis, theoretical and stylistic concepts, and performance practice. Prerequisite: MUS 203, 313.

420-3 Opera Production and Coaching
For advanced singers in the production of opera; culminates in public performance. Individual coaching for major role assignment. Study and involvement in technical areas of production: set design, building, properties, and costumes. May include participation in Dayton Opera productions.

424-3 Music Theory
Survey of music theory from Jean-Philippe Rameau to the present. Traces lines of thought that have had significant influence on musical study in the 20th century. Prerequisite: MUS 203, 313.

441-1, 442-1 Pedagogy

451-3, 452-3, 453-3 Piano Literature
Historical survey of music for piano from origins in clavichord and harpsichord in the Renaissance through the 20th century.

455-3, 456-3, 457-3 Vocal Literature
Survey of vocal literature from the 18th through the 20th century emphasizing German lieder, French melodic, English and American art songs, opera, and oratorio. For music majors only. Prerequisite: MUS 313.

465-3 Computer Applications in Music
Study of computer technology and music software applications. Emphasis is placed upon using MIDI for electronic score notation, sequencing, and basic courseware design. 2 hours lecture, 2 hours lab. Prerequisite: MUS 203, 253. (Previously listed as MUS 341).

471-3, 473-3 Advanced Composition
Creative writing that encompasses a variety of media and forms. Includes style exploration and the development of a personal style. Prerequisite: for 471, MUS 373.

480-1 to 4 Workshops in Music
Study of selected special topics or problems in music, or special areas of music teaching. Titles vary.

481-1 to 6 Advanced Studies in Special Subjects
Directed research. May be taken for a letter grade or pass/fail unsatisfactory.

Ensembles
Wright State staff and students not majoring in music may enroll with or without credit. Enrollment open to all students in the university.

144-1 University Brass Choir
A performance-oriented group which provides the student with chamber brass music experience. Students learn elements of ensemble execution, professionalism, brass music history, orchestral styles, and sound production. Audition required.

147-1 University Flute Choir
Performs music of all time periods and styles originally composed for this instrumentation as well as transcriptions of masterworks.

148-1 University Clarinet Choir
Performs music of all time periods and styles originally composed for this instrumentation as well as transcriptions of masterworks.
149-1 Chamber Wind Ensemble
Exploration of performance repertoire composed expressly for small wind ensemble. Works by such composers as Mozart, Strauss, Dvorak, Beethoven, and Stravinsky. Consent of conductor and student's applied instructor required. Corequisite: MUS 169 or 369.

166-1 Concert Band
Performs band music of all styles. Open to all students without audition.

167-1 Pep Band
Performs jazz, rock, and contemporary music at all home basketball games and for other campus activities. Audition required.

168-1 Jazz Band
A jazz performance-oriented group. Students learn elements of ensemble execution, professionalism, jazz history, jazz styles, and jazz improvisation. Audition required.

169-1 Wind Symphony
Performs original compositions and transcriptions for band and wind ensembles. Audition required.

170-1 University/Community Orchestra

177-1 Chamber Orchestra
Instrumental ensemble, consisting primarily of strings and varying combinations of wind and percussion instruments, devoted to the study and performance of music written for that medium.

190-1 University Chorus
Development of choral and vocal skills. Choral literature from a wide range of historical and compositional styles. No audition required.

192-1 Vocal Jazz Ensemble
Development of performance skills in vocal jazz. Emphasis on jazz style and techniques, improvisation, and jazz theory. Audition required. (Previously listed as MUS 265.)

193-1 University Men's Chorale
Development of advanced choral and vocal skills. Emphasis on advanced choral literature from a wide range of historical and compositional styles. Audition required.

194-1 University Women's Chorale
Development of advanced choral and vocal skills. Emphasis on advanced choral literature from a wide range of historical and compositional styles. Audition required.

195-1 University Madrigal Singers
Development of advanced choral and vocal skills. Emphasis on advanced vocal chamber literature from 15th through 20th centuries. Audition required.

197-1 Paul Laurence Dunbar Chorale
A choral ensemble for students who desire to explore the musical style of gospel music and its roots and various forms. Includes performances of a body of literature associated with the African-American church to the university and surrounding communities.

205-1 Chamber Music
Audition required.

344-1 University Brass Choir
A performance-oriented group which provides students with chamber brass music experience. Students learn elements of ensemble execution, professionalism, brass music history, orchestral styles, and sound production. Audition required.

347-1 University Flute Choir
Performs music of all time periods and styles originally composed for this instrumentation as well as transcriptions of masterworks.

348-1 University Clarinet Choir
Performs music of all time periods and styles originally composed for this instrumentation as well as transcriptions of masterworks.

349-1 Chamber Wind Ensemble
Exploration of performance repertoire composed expressly for small wind ensemble. Works by such composers as Mozart, Strauss, Dvorak, Beethoven, and Stravinsky. Consent of conductor and student's applied instructor required. Corequisite: MUS 169 or 369.

366-1 Concert Band
Performs band music of all styles. Open to all students without audition.

367-1 Pep Band
Performs jazz, rock, and contemporary music at all home basketball games and for other campus activities. Audition required.

368-1 Jazz Band
A jazz performance-oriented group. Students learn elements of ensemble execution, professionalism, jazz history, jazz styles, and jazz improvisation. Audition required.

369-1 Wind Symphony
Performs original compositions and transcriptions for band and wind ensembles. Audition required.

370-1 University/Community Orchestra
Performs orchestral music of all styles and periods.

377-1 Chamber Orchestra
Instrumental ensemble, consisting primarily of strings and varying combinations of wind and percussion instruments, devoted to the study and performance of music written for that medium. Audition required.

390-1 University Chorus
Development of choral and vocal skills. Choral literature from a wide range of historical and compositional styles. No audition required.

392-1 Vocal Jazz Ensemble
Development of performance skills in vocal jazz. Emphasis on jazz style and techniques, improvisation, and jazz theory. Audition required.

393-1 University Men's Chorale
Development of advanced choral and vocal skills. Emphasis on advanced choral literature from a wide range of historical and compositional styles. Audition required.
394-1 University Women's Chorale
Development of advanced choral and vocal skills. Emphasis on advanced choral literature from a wide range of historical and compositional styles. Audition required.

395-1 University Madrigal Singers
Development of advanced choral and vocal skills. Emphasis on advanced vocal chamber literature from 15th through 20th centuries. Audition required.

397-1 Paul Laurence Dunbar Chorale
A choral ensemble exploring the musical style of gospel music and its roots and various forms. Includes on- and off-campus performances of a body of literature associated with the African-American church. Audition required.

Nursing/NUR

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

All of the following courses require admission to the College of Nursing and Health. Course levels must be taken in sequence.

114-2 Nursing Elective
Special topics.

209-4 Introduction to Professional Nursing
Explores history of nursing, its response to society, and evolution of contemporary nursing. Emphasizes past, present, and future roles based on selected concepts, models, and theories within the health care systems.

210-2 Introduction to Nursing Informatics
Introduction to trends and issues of informatics in nursing and health care with an emphasis on effective use of hardware and software in information technology. Laboratory experience included.

212-3 Nursing for Health and Wellness Lifestyle
Emphasizes concepts, models, theories, and methodologies consistent with a philosophy of health and wellness. Incorporates self-directed activities to promote maximum health in self and others. Pre- or corequisite: NUR 209.

213-3 Field Experience in Health and Wellness
Explores the impact of cultural, ethical, legal, political, and socioeconomic issues relating to wellness across the lifespan. Promotes the RN student's philosophy of well-being through self-directed field experiences. Prerequisite: NUR 308. Pre- or corequisite: NUR 212.

214-2 Human Diversity in Health Care
Examination of human diversity in relation to health/well-being and health care delivery systems. Both global and future orientations of diversity will be considered. Pre- or corequisite: NUR 209.

217-5 Health Assessment Across the Lifespan
Includes development of a systematic approach to obtaining a health history and appraisal, performing physical assessments on individuals throughout the lifespan. Focuses on the well individual in a variety of life settings. Prerequisite: NUR 212, 214, ANT 202, P & B 301. Pre- or corequisite: NUR 210.

218-5 Introduction to Clinical Nursing
Focuses on skills and related concepts basic to clinical practice. Integrates health assessment skills into nursing care and development of nursing diagnosis. Communication for documentation of data base is stressed. Prerequisite: NUR 217, P&B 302, BMB 250. Pre- or corequisite: NUR 306.

304-3 Foundations of Nursing Research
Introduces the basic elements of the research process. Emphasizes the critique and application of research findings to professional nursing practice. Prerequisite: NUR 218, STT 160 or equivalent.

305-3 Legal and Ethical Foundations for Nursing Practice
Examines the theoretical basis of ethical decision making and legal elements of professional nursing practice. Prepares the student for clinical application experience in succeeding courses.

306-3 Concepts of Altered Health States
Focuses on the relationship of normal body functioning and the physiological changes that occur as a result of illness including the body's compensatory mechanisms. Emphasis is placed on alterations in body function and system/organ failure. Prerequisite: ANT 202, P&B 302 or RN status, CHM 102, or equivalent.

307-3 Foundations of Family and Group Nursing
Foundational course in family development from the perspective of family nursing science. Explores impact of environmental influences on family health. Theoretical frameworks guiding the study and practice of group work will be examined. Pre- or corequisite: NUR 218.

308-5 Theories and Concepts of Professional Nursing
Introductory course oriented toward the continued socialization of the professional nurse with synthesis of concepts, theories, processes, and models to facilitate transition into professional nursing. For registered nurses only.

312-10, 313-10 Nursing Process: Human Existence and Health I, II, III
Clinical nursing courses. Focus on the nursing process and the human ability to adapt to one's environment in relation to an optimum state of health. Learning experiences include a variety of settings within and outside the health-care system. Prerequisite: for 313, NUR 312.

317-2 to 4 Selected Topics
Topics vary.
321-6 Adult Health and Illness
A clinical course which focuses on adults across the lifespan with altered health states. Emphasis is on providing secondary preventive care in a variety of settings. Prerequisite: NUR 218, PHR 340, NUR 307. Pre- or corequisite: PSY 341.

322-6 Nursing Care of Childbearing Families
A clinical course focusing on the understanding and application of selected concepts related to the childbearing family in the maternity cycle. Prerequisite: NUR 321, 304. Pre- or corequisite: NUR 305.

323-6 Nursing Care of Childbearing Families
A clinical course focusing on children and adolescents in families with a variety of health states in various health care settings. Prerequisite: NUR 321, 304. Pre- or corequisite: NUR 305.

324-6 Nursing Care of Aging/Aged Families
Exames theories, trends, and research in gerontological nursing. Examines the aging self, holistic health and independent function, hospitalization, and nursing management of illness in the aged. Explores advocacy for vulnerable aged. Prerequisite: NUR 307. Pre- or corequisite: 321.

405-3 Theory of Aging/Aged Families
Exames theories, trends, and research in gerontological nursing. Examines the healthy aged, holistic health and independent function, hospitalization and nursing management of illness in the aged. Explores advocacy for vulnerable aged. Prerequisite: NUR 307. Pre- or corequisite: 321.

406-2 to 3 Contemporary Nursing Issues and Health Policy
Exames global aspects of the social, political, legal, ethical, and environmental issues influencing health care, health policy, and advancement of the nursing profession. Professional issues confronting contemporary nursing are emphasized. Prerequisite: NUR 322, 323, 324.

407-2 to 3 Nursing Leadership and Management in Health Care
Examination of theories and strategies of leadership and management in the realm of health care. Prerequisite: NUR 322, 323, 324.

411-10 Nursing Process: Human Existence and Health IV
Uses the nursing process with individuals and families adapting to long-term health impairments. Emphasizes the effect of political, social, and environmental forces on accessing the health care system. Related clinical experiences are provided. Prerequisite: NUR 304 and 313.

412-10 Nursing Process: Human Existence and Health V
Uses the nursing process with individuals and families across the life span who are experiencing depleted health states with healthy and imparied communities. Learning opportunities emphasize interdependent and collaborative activities in a variety of settings. Prerequisite: NUR 411 or 318.

413-10 Nursing Process: Human Existence and Health VI
Emphasizes leadership in caring for individuals, families, and communities with multiple health states. Learning opportunities focus on leadership in a variety of settings. Prerequisite: NUR 412.

414-1 to 4 Nursing Elective
Topics vary. Prerequisite: NUR 218,

415-1 to 4 Independent Study
Faculty-directed, individualized study on student-selected topics. Permission of faculty required. Prerequisite: NUR 218.

421-6 Nursing in Mental Health Systems
Focuses on primary, secondary, and tertiary prevention of mental health problems with individuals, families, and groups. Foundations of psychosocial nursing practice are developed. Cultural, biosocial, and sociopolitical forces affecting mental health systems are analyzed. Prerequisite: NUR 322, 323, 324.

422-6 Nursing in Community Health Systems
Clinical course integrating nursing and public health concepts/trends to assess community health needs. Primary, secondary, and tertiary prevention for health of individuals, families, groups, and communities affected by social, political, and environmental forces are stressed. Prerequisite: NUR 322, 323, 324.

423-6 High Acuity Nursing in Complex Health Systems
A clinical course focusing on individuals experiencing life-threatening physiological crises. Integrates physiological, family, and community knowledge with concepts of high acuity care in a variety of settings. Prerequisite: NUR 322, 323, 324.

424-7 Synthesis Practicum in Professional Nursing
Clinical course which assists students in integration of theory and practice with emphasis on complexity of design and management of nursing care for individuals, families, and groups. Provides concentrated clinical practice in selected clinical areas. Graded pass/unsatisfactory. Prerequisite: NUR 421, 422, 423. Corequisite: NUR 408.

425-3 Synthesis Practicum in Professional Nursing
Integration of theories and concepts for transition into professional practice with the evolution of a personal philosophy of nursing. May be taken for letter grade or pass/unsatisfactory. Prerequisite: NUR 406, 407, 422. For RNs only.
**Office Administration/OA**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

**201-3 Beginning Shorthand**
Development of a vocabulary/writing skill in Gregg shorthand. Permission of instructor required for students with shorthand skills.

**202-3 Intermediate Shorthand**
Continued vocabulary and writing skill development in Gregg 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, transcription skills and speed building in Gregg shorthand. Prerequisite: OA 202 or equivalent proficiency and permission of advisor.

**210-3 Keyboarding**
Basic instruction in keyboarding and document formatting with word processing software.

**211-3 Beginning Typewriting**
A mastery of the basic skills in touch typewriting. The typing of letters, reports, short tabulations, themes, manuscripts, and office memoranda.

**212-3 Intermediate Typewriting**
Mastery of the basic skills in keyboarding using word processing software. Typing of letters, reports, short tabulations, themes, manuscripts, and memoranda. 2 lab hours per week required. Prerequisite: OA 211 or permission of instructor.

**213-3 Advanced Typewriting**
Acquired skills and knowledge in keyboarding, word processing, and document formatting are reinforced on an advanced level in the mailable production of a variety of business communication. Instruction and practice are provided in the use of office dictation/transcription equipment. 2 hours lab per week required. Prerequisite: OA 212.

**222-3 Advanced Word/Information Processing with Desktop Applications**
Basic typography and design principles supplement advanced WordPerfect techniques in desktop applications. 2 lab hours per week required. Prerequisite: OA 220.

**Pharmacology/PHR**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

**340-3 Pharmacology**
Introduction to general principles of pharmacology, drug classification, and the sites and mode of action of selected drug agents. Prerequisite: CHM 102; P&B 301, 302.

**410-3 Introduction to Pharmacology**
Covers basic principles of pharmacology, including dose-response relationships, mechanisms of drug action and resistance, the concept of drug
receivers and specific binding, and biological transport and distribution of drugs. Prerequisite: BIO 112, CHM 211.

495-2 to 5 Honors Research in Pharmacology
Experiential learning for honors program students interested in basic biomedical research. Tutorial with laboratory.

499-2 to 4 Undergraduate Research
Experiential learning in which students participate in ongoing research projects. Tutorial with laboratory.

Philosophy/PHL

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions.

124-3 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.

204-3 Great Books: Philosophy
Introduction to selected great books in the history of Western philosophy chosen from each of three eras (ancient/medieval, modern, and contemporary) and examined both within their respective historical frameworks and as an exercise in critical thinking.

211-3 Introduction to Ethics
Survey of the important theories concerning the nature of moral value and obligation.

212-3 Introduction to Metaphysics
Survey of the important theories concerning the nature of reality, mind and body, and freedom and determinism.

213-3 Theories of Knowledge
Survey of the important theories concerning the origin, structure, methods, certainty, and validity of knowledge.

215-4 Inductive Logic
Introduction to the techniques of inductive and probabilistic reasoning with emphasis on the problems encountered in attempting to justify those techniques.

223-4 Symbolic Logic I
Introduction to the techniques of deductive logic including truth-table analysis, the prepositional calculus, and predicate logic.

280-3 Philosophy of Religion: Faith and Reason
(Also listed as 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, and karma and reincarnation. Issues are discussed on the basis of selected texts on faith and reason.

281-3 Philosophy of Religion: Contemporary Western Survey
(Also listed as REL 281.) 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.

301-4, 302-4, 303-4 History of Philosophy
301: pre-Socratic philosophers, Plato and Aristotle; Epicureanism, stoicism, skepticism, neo-Platonism, 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.

323-4 Symbolic Logic II
Standard notations, principles of inference, formal systems, and methods of proof. Focus on first-order predicate logic. Prerequisite: PHL 223 or instructor permission.

341-4 Aesthetics
Study of theories concerning the nature of the work of art, aesthetic experience, the arts, and beauty.

371-4 Business Ethics
(Also listed as REL 371.) Case study and discussion of ethical issues involved in business transactions and management.

378-4 Ethics and Medicine
(Also listed as 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.

382-4 Philosophy of Religion: Process
(Also listed as REL 382.) Realism and the revolt against idealism. Cross-disciplinary analysis of major contemporary philosophers and the implications of their thought for religion. Focus on Alfred North Whitehead.

383-4 Philosophy of Religion: Secular
(Also listed as REL 383.) Cross-disciplinary analysis of modes of human awareness through which religious meaning is expressed (sensation, morality, beauty, reason, and human relations). Examination of presuppositions of contemporary secular religion in existentialism.

394-4 Existentialism
(Also listed as REL 394.) Representative writers of the existentialist movement.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of philosophy. Topics vary.
Course Descriptions

401-3 Major Philosophers
Introduction to the major writings of outstanding philosophers. Involves presentation and critical examination of the philosophers' views.

414-4 Philosophy of Law
Survey of the important theories concerning the nature and justification of law, liberty, justice, responsibility, and punishment. Prerequisite: Junior or senior standing or permission of instructor.

415-4 Philosophical Problems
Detailed examination of one of the outstanding philosophical problems—ancient, medieval, and/or contemporary.

431-4 Classical and Medieval Political Philosophy
(Also listed as PLS 402.) 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.

432-4 Modern Political Philosophy
(Also listed as PLS 403.) Critical examination of political ideas from 1600 to 1900, with special attention to Hobbes, Locke, Rousseau, Montesquieu, Hume, Burke, Hegel, Bentham, Marx, and Mill.

442-4 Philosophy and Literature
Examination of philosophical ideas found in literature, philosophical interpretations of literature, and evaluation of theories and aesthetics of literature.

443-4 Asian Religious Philosophy
(Also listed as REL 443.) Perennial themes in Asian cultures (such as individual, society, and cosmos; appearance and reality; time and history; and karma, freedom, and responsibility) as they have been treated in the philosophical traditions of these cultures.

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.

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.

481-3 to 4, 482-3 to 4, 483-3 to 4 Independent Reading
Faculty-directed readings in philosophic literature.

Physics/PHY

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-1, 102-1, 103-1 Principles of Physics Laboratory
Introductory-level laboratory problems. Corequisite: for 101, PHY 111; for 102, PHY 112; for 103, PHY 113.

105-3 Sounds and Colors
Study of wave motion with an orientation toward phenomena experienced by our senses, such as musical sounds, noise, and the colors occurring in nature. Corequisite: PHY 115.

106-3 Revolutions in Physics
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. Corequisite: PHY 116.

107-3 Stars, Galaxies, and the Cosmos
Introduction to astronomy with emphasis on the universe of stars and galaxies. Covers stellar evolution, astrophysics, and cosmology. Corequisite: PHY 117.

111-4, 112-4, 113-4 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.

115-1 Sounds and Colors Laboratory
Experiments to illustrate the physical aspects of what we see and hear. Laboratory component of PHY 105 for students using the course to meet the General Education science requirement.

116-1 Revolutions in Physics Laboratory
Astronomical observations and experiments. Laboratory component of PHY 106 for students using the course to meet the General Education science requirement.

117-1 Stars, Galaxies, and the Cosmos Laboratory
Astronomical observations and measurements, laboratory experiments, and a visit to a planetarium. Laboratory component of PHY 107 for students using the course to meet the General Education science requirement.

122-3 Revolutions in Physics
Microscopic structure of matter from the atomistic 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 Stars, 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.

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, and astrophysics. Laboratory is listed as PHY 135.

131-1 Revolutions in Physics Laboratory
Experiments stress the relationship of everyday phenomena to basic physical principles. Laboratory 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. Laboratory component of PHY 123 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 a planetarium. Laboratory component of PHY 125 for students wishing to use course to meet General Education science requirements.

200-1 General Physics Laboratory

202-1 General Physics Laboratory

204-1 General Physics Laboratory
Introductory physics laboratory problems in heat, sound, mechanics, and optics. Prerequisite: PHY 240 and 200. Corequisite: PHY 244.

210-3 General Physics
Selected topics in mechanics; introduces use of calculus in interpretation of physical phenomena. Prerequisite: PHY 112, 113; MTH 230.

211-3 General Physics
Selected topics in electricity and magnetism; introduces use of calculus in interpretation of physical phenomena. Prerequisite: PHY 112, 113; MTH 230.

After successfully completing PHY 111, 112, 113, 210, and 211, students may take courses that have PHY 240, 242, and 244 as prerequisites.

215-4 Introduction to Lasers
An elementary introduction to lasers including basic theory, properties of laser light, construct of a laser, types of lasers, measurement of laser emission, laser safety, and laser applications. Primarily for nonphysics majors. Prerequisite: MTH 128 or MTH 129, and PHY 113 or CHM 122.

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. Prerequisite: MTH 229 or permission of department. Corequisite: PHY 200, MTH 230.

242-4 General Physics
Introductory survey of electricity and magnetism. Uses calculus in interpreting physical phenomena. Topics include electric field and potential, currents, DC circuits, magnetic fields, and Faraday's law. 3 hours lecture, 1 hour recitation. Prerequisite: PHY 240, MTH 230, Corequisite: PHY 202.

244-5 General Physics
Introductory survey of thermodynamics, oscillations and waves, sounds, fluids, gravity, and optics. Calculus is required in interpreting physical phenomena. Prerequisite: PHY 240 and MTH 250; or permission of department. Corequisite: PHY 204.

245-4 Concepts in Physics
An accelerated treatment of fundamental concepts and applications of physics for elementary education majors. Practical observable topics appropriate for presentation to elementary and middle school students will be emphasized. Includes laboratory experiences, demonstrations, and projects. Elementary education majors only. Integrated lecture/lab. Prerequisite: MTH 143, ENG 102, SM 145.

260-4 Introduction to Modern Physics
Introduces phenomenology and theoretical concepts of modern physics, such as special theory of relativity and quantum theory; atomic and molecular structure and spectra; x-rays and solid state physics; nuclear structure, reactions, and natural radioactivity; and instrumentation for nuclear physics research. One hour is devoted to demonstrations and recitations. Prerequisite: PHY 210, 211, or 244; MTH 230.

310-3 Issues in Science
(Also listed as BIO 310, CHM 310, MTH 310, and GL 310.) A writing-intensive course dealing with issues in science. Prerequisite: ENG 101, 102; a first-year science course.

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. 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
(Also listed as EP 322.) 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. Prerequisite: PHY 244 or equivalent; MTH 253.

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, and the Lagrange method. Prerequisite: PHY 210, 211, or PHY 244; MTH 232. Corequisite: MTH 233.

400-3 Properties of Semiconductor Materials
(Also listed as EP 400.) Crystal structure, energy bands, charge carriers, and carrier motion in semiconductors. Electrical and optical properties. P-N junction diodes. Equilibrium, dc, ac, and transient characteristics. Metal-Semiconductor junctions, Device design. Prerequisite: PHY 240, 242, and 244 and CHM 121. (Previously listed as PHY 300.)

401-3 Semiconductor Device Physics
(Also listed as EP 401.) Structure and characteristics of bipolar transistors, field effect transistors, and other selected devices. Design and computer modeling of devices. Prerequisite: PHY 300/EP 300. (Previously listed as PHY 301.)

402-3 Semiconductor Device Processing
(Also listed as EP 402.) Survey of the individual processes used in fabricating semiconductor devices. Integration of these processes to produce MOS and bipolar structures. Computer design aids. Prerequisite: PHY 300, 301, or EP 300, 301, or ME 370, or permission of instructor. (Previously listed as PHY 302.)

420-3 Thermodynamics
First and second laws of thermodynamics; general thermodynamic formulas with applications to matter. Prerequisite: PHY 210, 211 or 244.

421-3 Statistical Thermodynamics
Topics include kinetic theory of gases, Maxwell-Boltzmann statistics, and an introduction to quantum statistics. Prerequisite: PHY 420.

422-5 Introduction to Geophysical Prospecting
(Also listed as GL 422.) Introduction to principles of gravity, magnetic, seismic, electrical, and radioactive prospecting. 4 hours lecture, 2 hours lab. Prerequisite: PHY 422, or MTH 229.

424-4 Gravity and Magnetic Exploration
(Also listed as GL 424.) Study of the theory of the earth’s gravitational and magnetic fields and the application of these principles to resource exploration. 3 hours lecture, 2 hours lab. Prerequisite: PHY 422 or permission of instructor.

432-3 Lasers
(Also listed as EP 432.) 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 260, MTH 233 or permission of instructor.

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, and electromagnetic radiation. Prerequisite: PHY 210, 211, or 242; 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 Nuclear and Particle Physics
Nuclear properties and models, radioactive decay, nuclear applications, elementary particle properties and interactions, the standard model. Prerequisite: PHY 460.

470-3 Selected Topics
Selected topics in physics. Prerequisite: PHY 372.

480-4, 481-3, 482-3 Introduction to Theoretical Physics
Introduction to classical theoretical physics. Emphasis on mechanics, electromagnetic field theory, and mathematical techniques. Prerequisite: PHY 372, 452; MTH 333. Departmental approval required.

488-1 to 3 Independent Reading
Prerequisite: PHY 240, 242, 244; or equivalent.

494-3 Senior Projects
Selected problems in experimental and theoretical physics with critical analysis of results.

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.

Physiology and Biophysics/P&B
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

301-4 Human Physiology I
Subject areas include homeostasis; cell, nerve, and muscle function; nervous system regulation; and
cardiovascular and circulatory systems.
Prerequisite: ANT 201, 202, CHM 102, MTH 126 or placement level 4, BIO 105 or equivalent, and permission of instructor.

302-4 Human Physiology II
Subject areas include gastrointestinal and metabolic systems; respiratory and renal systems; acid-base balance; endocrinology and temperature regulation. Prerequisite: P&B 301 or permission of instructor.

442-4 Introductory Neurophysiology
Studies the physiological mechanisms that subserve the functions of the nervous system. Topics include the biophysics of neuronal information, intercellular communications, motor control, sensory systems, and developmental neurobiology. Prerequisite: BIO 105 and CHM 101 or equivalents.

469-3 Quantitative Aspects of Membrane Transport
Employs a quantitative approach to the properties of solutes, water, bio-electrical phenomena, the properties of transport systems that move solutes across biological membranes, and the interactions of these solutes with membranes. Completion of a course in calculus and cell biology required.

488-1 Independent Reading in Physiology
Independent reading in physiological literature. A written report is required for each registered period. Optional pass/fail or letter grade.

499-4 to 4 Special Problems in Physiology
Specialized program that 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.

Political Science/PLS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

200-3 Political Life
Examination of political power relationships in contemporary society. Emphasizes the origins and forms of power and the key social structures exercising power with contemporary public issues. Provides case studies of the consequences of political relationships.

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 level 3 on placement exam.

211-4 Empirical Political Analysis
Scope and methods of empirical political research; concepts and hypotheses; explanation and prediction; and methodological approaches to the study of politics and political behavior. Prerequisite: PLS 210 or permission of instructor.

212-4 American National Government
Introductory survey of American national government including study of political participation, interest groups, political parties, leadership, mass media, elections and campaigns, the Constitution, presidency, Congress, bureaucracy, and the courts. Prerequisite: Permission of instructor.

222-4 International Politics
Introductory survey of the international political system including study of state and non state actors, major features of the system, conflict roots and approaches to peace-keeping, and current issues. Prerequisite: PLS 200 or permission of instructor.

225-4 Approaches to Women's Studies
(Also listed as WMS 200.) Introduces historical and contemporary feminist thought and explores the importance of gender as a category of analysis to understand social, cultural, political, and economic forces.

301-4 Modern Political Ideologies
Systematic analysis of the major political ideologies of the twentieth century with particular attention to democracy, fascism, communism, and nationalism.

PLS 302 through 494 require completion of political science core courses or permission of instructor.

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.

321-4 City Politics
(Also listed as URS 321.) Governments and politics of metropolitan regions; government structure and functions; and interest and power relations.

322-4 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.

323-4 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.

324-4 Political Aspects of Urban Development
Institutional and political context of planning; laws, governmental structures and procedures, and urban politics.
325-4 African American Politics
Explores what makes African-American politics distinctive from American politics and discusses the prerequisites for effective political and economic leadership in the black community. A major theme of the course is the notion of black power.

331-4 Political Parties

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; and presidential personality.

337-4 The Legislative Process
Policy role, political functions, internal structure, and operation of Congress. Secondary concern for state legislatures and non-American legislative bodies.

340-4 Law and Society
Theories of law; in addition to the nature and functions of the judicial process.

342-4 Civil Liberties I: The First Amendment
Cases and related materials on the Bill of Rights and the Fourteenth Amendment with emphasis on the First Amendment freedoms: freedom of speech, of the press, and of religion.

343-4 Civil Liberties II: Due Process and Equal Protection
Cases and related materials on the enforcement of civil rights and liberties through the due process and equal protection claims of the Fourteenth Amendment.

345-4 Public Administration
(Also listed as URS 345.) Nature and scope of public administration, administrative law, and 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. Examines organizations of public employees.

347-4 American Public Policy Analysis

351-4 Western European Politics
Comparative study of the political systems of Great Britain, France, and West Germany.

352-4 Politics of Nationalism
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 African American 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 developments in Poland, Czechoslovakia, East Germany, Hungary, Romania, 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.

358-4 Latin American Politics
Selected issues in the study of Latin American politics with an emphasis on the nature of the state and the role of institutions such as the military and unions in politics. Examples from major South American states and Mexico where appropriate. Prerequisite: PLS 222.

360-4 Politics of the Developing Nations
Comparative analysis of various problems, particularly political, confronting developing nations in nation building and 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.

368-4 Politics of Vietnam
An examination of the history, demography, politics, culture, and economy of Vietnam.

370-4 International Theory
Study of recent findings in international politics. Explanations of world political developments such as war, alliance formation, and arms races. Prerequisite: PLS 222.

371-4 Current World Problems
Various views and perspectives on selected contemporary problems and trends in international politics.
374-4 International Human Rights
Examines the role of human rights in international relations and considers contending definitions of human rights and debates over policy by focusing on case studies including South Africa, China, Guatemala, and Bosnia.

375-4 Human Rights in the USA
Examines controversies over human rights in the U.S. and considers contending definitions of human rights and debates over policy by focusing on a range of issues including immigration, pornography, gay rights, race relations, and poverty.

376-4 Peace Studies
Study of war, 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.

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. Prerequisite: PLS 222.

381-4 National Security Policies
Study of U.S. national defense and security policy process and the major strategic issues facing the U.S. government. Prerequisite: PLS 200 and major core courses.

382-4 U.S.-Japan Foreign Relations
Examines the course of the relationship between the U.S. and Japan. Includes political, security, and economic issues.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of political science. Topics vary.

402-4 Classical and Medieval Political Thought
(Also listed as 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.

403-4 Political Thought: Hobbes to Mill
(Also listed as PHL 432.) Critical examination of political ideas from 1600 to 1900 with special attention to Hobbes, Locke, Rousseau, Montesquieu, Hume, Burke, Hegel, Bentham, Marx, and Mill.

404-4 Twentieth-Century Political Thought
Critical examination of twentieth-century political theory. Emphasis on nature, methodology, evaluation, existing condition, and future of political thought.

405-4 Feminist Political Theory
An exploration of feminist interpretations and critiques of Western political theory and examination of the development of contemporary feminist political thought. Prerequisite: PLS 200 or PLS 225 or WMS 200.

406-4 Theories of International Political Economy
An examination of contending theories of international political economy, including mercantilist, liberal, (neo)Marxist, and feminist perspectives.

407-4 Seminar in Political Theory
Readings, research, reports, and discussion on selected theorists, topics, and problems. Topics vary.

408-4 Radical Black Thought
Examines radical black thought and philosophy from a Pan-Africanist perspective, focusing primarily on the 20th century.

412-4 Topics in Empirical Political Analysis
Selected topics of methodological or analytical concern in contemporary political research.

425-4 Seminar in Metropolitan Studies
Intensive interdisciplinary treatment of metropolitan studies. Reading and discussion of pertinent theory, methodology, and case studies. Practical research by students.

427-4 Urban Policy Analysis
(Also listed as URS 427.) 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
(Also listed as 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, and research.

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; and 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.

435-4 Political Corruption in America
Analysis of political corruption in America, including campaigns and elections, graft, the executive branch, congressional ethics, corruption in law enforcement, organized crime, and abuse of authority.

436-4 Criminal Law
Examines the nature of the criminal law and reviews the law pertaining to criminal liability; inchoate crimes; the elements of crimes against persons, property, and habitation; and the defenses to criminal actions.
Course Descriptions

437-4 Criminal Procedure
Examines the constitutional protections that the individual has when confronting the criminal justice system and examines the case law pertaining to the Fourth Amendment (search and seizure), Fifth Amendment (self-incrimination), and Sixth Amendment (right to counsel).

438-4 Environmental Law and Policy
Examines environmental law and policy and reviews the statutory framework pertaining to environmental impact statements, the regulation of air and water pollution, the disposal and cleanup of toxic wastes, and workplace safety.

439-4 Bioethics and Law
Examines the legal implications of new biological technologies, particularly mind and behavior control, genetic engineering, birth and death control, and organ transplantation.

440-4 Constitutional Law
Cases in which provisions of the Constitution have been judicially interpreted. Also examines federal systems, separation of powers, and limits on government.

441-4 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.

442-4 Administrative Law Procedure
Study of the law controlling the process by which public agencies make and administer policy. Topics include policy formulation and budgeting, legislative delegation, administrative agencies, rulemaking, and adjudication.

443-4 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; and legislative/executive relations in budget formation and implementation.

444-4 Seminar in Public Administration
Selected national, state, and local problems with emphasis on legal scope of administrative power and on research methods used by staff agencies. Topics vary.

445-4 Gender Violence and American Politics
Examines gender violence in the U.S. Considers the range of violence, its sources, and solutions. Topics include domestic violence, rape, eating disorders, reproductive rights, and pornography.

446-4 International Politics of Gender Violence
Cross-cultural examination of gender violence. Considers the range of violence, its sources, and solutions. Topics include domestic abuse, rape, female genital surgeries, prostitution, and reproductive rights.

450-4 Political Anthropology
(Also listed as ATH 450.) Study of that part of the culture of primitive societies that 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.

453-4 Soviet Successor States
Examines the political life in the former Soviet Union, with emphasis on the legacy of communism and the role of economics and politics in the transition to democracy.

460-4 Seminar on Comparative Political Systems
Readings, research, reports, and discussion of selected topics and problems. Topics vary.

470-4 Seminar in International Relations
Readings, research, reports, and discussion of selected topics and problems.

471-4 International Law
Study of rules governing the conduct of international politics with emphasis on their relevance to current world problems.

472-4 International Terrorism
Surveys the phenomenon of terrorism; who employs it, how and why it occurs in international politics, and how targets respond to terrorism. The special problems terrorism creates for democracies and the politics of hostage-taking are examined. Prerequisite: PLS 222.

473-4 Politics of Gender Violence
A cross-cultural examination of women's human rights and gender violence. Considers the range of violence, its sources, and solutions. Topics include domestic abuse, rape, female circumcision, purdah, anorexia, and reproductive rights. Prerequisite: PLS 212 and 222.

474-4 Politics of Women Terrorists
Examines the political behavior of women in crime and terrorism, including the roles played by women in criminal activities and terrorist groups. Prerequisite: PLS 222.

482-4 Legislative Internship
Experiential internship in the office of a state legislator, including office work, constituent assistance and research. Sophomore standing and permission of instructor required.

486-4 Model U.N. Seminar
Model U.N. is an experiential learning opportunity built around this seminar, with intensive training in research, public speaking, bargaining, and conflict resolution. Culminates at the national collegiate conference in New York, simulating the United Nations.

490-1 to 4 Independent Reading
Supervised individual readings on selected topics. Arranged between students and faculty member directing the study.
491-1 to 4 Independent Research
Supervised individual research on selected topics. Arranged between students and faculty members directing the study.

492-1 to 4 Independent Field Experience
Supervised individual projects. May involve intern programs in local government or other special programs.

493-1 to 4 Contemporary Problems
Advanced study in selected topics that frequently include new developments in the methodology or subject matter of the various subfields of the discipline.

494-1 to 4 Special Topics
Study of particular political problems of contemporary significance.

Portuguese/POR
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

111-4 Essentials of Portuguese
Introduction to Portuguese with an emphasis on speaking the language.

Psychology/PSY
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

105-4 Psychology: The Science of Behavior
Consideration of the causes of behavior. Includes physiological processes; learning, memory, and processing of information; perceptual, cognitive, and social changes from birth to old age; and individual differences in thoughts, feelings, and actions.

110-4 The Science of Behavior II
Fundamental principles and practices of psychology are reviewed. Topics include social behavior, adjustment and mental health, motivation and emotion, and perception.

111-4 Introductory Psychology
Introduction to basic concepts in the study of behavior with emphasis on methods of psychology; physiological considerations; motivation, sensation and perception, and learning and cognition.

112-4 Introductory Psychology
Introduction to basic concepts in the study of behavior with 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. Prerequisite: PSY 105, 110 or PSY 111, 112.

201-4 Divorce: Current Perspectives
Survey of theories, current research, and methodological issues relating to the divorce process, the effects of divorce on children, and professional intervention. Prerequisite: PSY 105, 110 or PSY 111, 112.

202-4 Psychology of Nonverbal Communication
Introduction to the perception of nonverbal sources of information and their impact on physical and cognitive behaviors. Prerequisite: PSY 105, 110 or PSY 111, 112.

203-4 Psychology of Health Behavior
Survey of the contributions of the psychology of health care. The focus is both theoretical and practical, emphasizing the integration of physiological and psychological knowledge. Prerequisite: PSY 105, 110 or PSY 111, 112.

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. Prerequisite: PSY 105, 110 or PSY 111, 112.

209-4 Behavior Modification
Basic survey of the principles of conditioning as they relate to problems in human adjustment. General principles of the psychology of learning are emphasized, but are also applied through cases of interest to a wide variety of helping professionals. Prerequisite: PSY 105, 110 or PSY 111, 112.

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. Prerequisite: PSY 105, 110 or PSY 111, 112.

PSY 111 and 112 are the minimum prerequisites 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 105, 110 or PSY 111, 112; STT 265.
304-4 Industrial and Organizational Psychology
Scientific psychological principles, procedures, and methods applied to human behavior in organizations. Prerequisite: PSY 105, 110 or PSY 111, 112.

306-4 Engineering Psychology
(Also listed as HFE 306.) Introduction to the study of human factors in the design and operation of machine systems. Prerequisite: PSY 105, 110 or PSY 111, 112.

307-4 Tests and Measurements
Introduction to the construction and use of attitude scales, and aptitude and ability tests in organizational settings, with emphasis on the use of standard tests. Prerequisite: PSY 105, 110 or PSY 111, 112.

311-4 Abnormal Psychology
Overview of facts and theories pertaining to abnormal behavior. Topics include classification and diagnosis, and causes and treatment of abnormal behavior. Prerequisite: PSY 105, 110 or PSY 111, 112.

321-4 Cognition and Learning
Survey of cognitive processes with an emphasis on learning and memory systems. Topics include short-term memory, retrieval mechanisms, conceptual structures, cognitive skill tests (e.g., IQ tests), mnemonic techniques, and amnesias. Prerequisite: PSY 105, 110 or PSY 111, 112.

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. Prerequisite: PSY 105, 110 or PSY 111, 112.

333-4 Personality Research Methods
Laboratory experience in research techniques related to experimental personality. Examines 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. Prerequisite: PSY 105, 110 or PSY 111, 112.

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 individual students. 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. Prerequisite: PSY 105, 110 or PSY 111, 112.

353-4 Social Psychology Methods
Laboratory course in methods and problems involved in social psychology research. 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. Prerequisite: PSY 105, 110 or PSY 111, 112.

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
Study of the active processes by which organisms gather, interpret, and respond to environmental stimuli. Prerequisite: PSY 105, 110 or PSY 111, 112.

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. Emphasis on motivational systems and learning. Prerequisite: PSY 105, 110 or PSY 111, 112 (no prerequisite for biological sciences majors).

392-4 Advanced Physiological Psychology
Physiological mechanisms of behavior. 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.

401-4 Advanced Experimental Design: Packaged Computer Programs
Focus on the use of commercial computer programs such as SPSS, SAS, and BIOMED in the design, analysis, and interpretation of behavioral oriented research. Prerequisite: PSY 300, 400.

411-4 Advanced Topics in Abnormal Psychology
Theories and research relating to causes, symptoms, and influences of abnormal behavior. Prerequisite: PSY 311.

419-4 Advanced Topics in Physiological Psychology
Detailed examination of selected areas in physiological psychology. Prerequisite: PSY 391.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>421-4</td>
<td>Advanced Topics in Cognition and Learning</td>
<td>Detailed examination of selected areas in cognition and learning.</td>
<td>PSY 321</td>
</tr>
<tr>
<td>425-4</td>
<td>Human-Computer Interface</td>
<td>Relationship of human cognitive, perceptual, and language processes to the effective operation of computer systems. Review of research and theory.</td>
<td>PSY 321, CS 142</td>
</tr>
<tr>
<td>429-4</td>
<td>Advanced Topics in Interpersonal Relations</td>
<td>Interpersonal relations as a subject of research and theory. Consideration of application to therapeutic intervention and everyday interaction.</td>
<td>PSY 321 or 351</td>
</tr>
<tr>
<td>431-4</td>
<td>Advanced Topics in Personality</td>
<td>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.</td>
<td>PSY 331</td>
</tr>
<tr>
<td>432-4</td>
<td>Practicum in Applied Psychology</td>
<td>Work under supervision in an applied psychological setting consistent with students' individual interests (e.g., mental health agency, industrial or organizational setting). Graded pass/unsatisfactory.</td>
<td>PSY 300 and 341</td>
</tr>
<tr>
<td>433-4</td>
<td>Developmental Psychopathology</td>
<td>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.</td>
<td>PSY 300 and 341</td>
</tr>
<tr>
<td>439-4</td>
<td>Theory and Research in Clinical Psychology</td>
<td>Overview of contemporary clinical approaches, research techniques, and empirical data.</td>
<td>PSY 331, 411</td>
</tr>
<tr>
<td>441-4</td>
<td>Advanced Topics in Developmental Psychology</td>
<td>Development of learning and cognition in children covered in depth.</td>
<td>PSY 341</td>
</tr>
<tr>
<td>443-4</td>
<td>Psychometrics</td>
<td>Emphasis on measurement theory and its applications including concepts of reliability, validity, discrimination, and prediction.</td>
<td>PSY 300</td>
</tr>
<tr>
<td>444-4</td>
<td>Advanced Industrial Psychology</td>
<td>Theories and research findings in selected topics in industrial psychology.</td>
<td>PSY 300, 304 or permission of instructor.</td>
</tr>
<tr>
<td>445-3</td>
<td>Unifying Concepts and Processes in Science and Developing Problem-Solving Abilities I</td>
<td>Design, implementation, and assessment of pre-college science activities congruent with the national and state science models and for development of problem-solving abilities. Practice in facilitating these activities.</td>
<td>PSY 300, 304 or permission of instructor.</td>
</tr>
<tr>
<td>447-4</td>
<td>Psychology of Aging</td>
<td>Overview of the theoretical, methodological, and conceptual issues in the study of human aging. Focus on both current research and applied relevance.</td>
<td>PSY 111, 112, 341</td>
</tr>
<tr>
<td>450-4</td>
<td>Biofeedback: Research and Application</td>
<td>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.</td>
<td>PSY 361</td>
</tr>
<tr>
<td>451-4</td>
<td>Advanced Topics in Social Psychology</td>
<td>Detailed examination of selected areas of current research in social psychology.</td>
<td>PSY 351</td>
</tr>
<tr>
<td>465-4</td>
<td>Information Processing</td>
<td>Study of information processing skills such as selective attention, pattern recognition, reading, problem solving, and human performance.</td>
<td>PSY 321</td>
</tr>
<tr>
<td>471-4</td>
<td>Advanced Topics in Perception</td>
<td>Emphasis on modern controversial issues and theories.</td>
<td>PSY 371</td>
</tr>
<tr>
<td>475-4</td>
<td>Signal Detection Theory in Psychology</td>
<td>Presents signal detection theory in the context of Thurstonian scaling and statistical decision theory. Studies the application of signal detection theory in various areas of psychology including psychophysics, memory, physiology, and psycholinguistics.</td>
<td>PSY 300</td>
</tr>
<tr>
<td>478-4</td>
<td>Animal Behavior</td>
<td>Physiology, phylogeny, and ontogeny of behavior.</td>
<td>BIO 112, 114, 115 or BIO 105, 106, 107; or PSY 111, 112, 300.</td>
</tr>
<tr>
<td>481-4</td>
<td>History of Psychology</td>
<td>Major trends in the development of psychology from its beginnings to the modern period.</td>
<td>PSY 300</td>
</tr>
<tr>
<td>488-1 to 4</td>
<td>Seminar in Special Topics</td>
<td>Topics vary.</td>
<td></td>
</tr>
<tr>
<td>489-2</td>
<td>Honors Seminar</td>
<td>Primarily derived from current honors thesis research. Literature surveys, experimental designs, and special analytical problems presented and discussed by students and faculty. Topics vary.</td>
<td></td>
</tr>
<tr>
<td>490-1 to 4</td>
<td>Independent Readings</td>
<td>Specific topics selected by students and instructor. Graded pass/unsatisfactory.</td>
<td></td>
</tr>
<tr>
<td>499-1 to 4</td>
<td>Honors Research Project</td>
<td>Original problems for investigation leading to a psychology department honors thesis.</td>
<td></td>
</tr>
</tbody>
</table>
Regional Studies/RST/RSE

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

RST 260-3 Regional Studies: Asia
Introduction to the environments, human organizations, and populations of selected regions or countries in Asia, providing an overview of the region with focus on a particular part of the region such as Japan, China, or South Asia. Titles vary.

RST 260-3 Asia: China
Brief introduction to Asian environments and cultures and a detailed examination of the development of China and of the conflict between traditional values, cultural patterns, and current development efforts.

RST 270-3 Regional Studies: Africa
Introduction to African environments; diversity of cultural heritages; changes due to modernization; industrialism, slavery, and independence; a brief survey of the relations of Africa to other non-Western regions; and the contribution of Africa to world civilization.

RSE 260-3 Regional Studies: Latin America
Survey of non-Western societies including Indians, mestizos, blacks, and the peasantry, from pre-Columbian and African origins to the present, in terms of ideology, organization, social structure, culture, and economic activities.

RST 290-3 Regional Studies: The Middle East
Introduction to the history, peoples, cultures, and geography of the Middle East from Mauritania to Pakistan from the seventh century to the present.

Rehabilitation/RHB

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-3 American Sign Language I
Introduction to manual communication for professionals preparing to work in rehabilitation or anyone interested in learning sign language.

102-3 American Sign Language II
Continuation of the introduction to manual communication. Emphasis is on conversational skills. Aspects of deafness are covered through speakers and readings. Prerequisite: RHB 101.

103-3 American Sign Language III
Emphasis on skill improvement in American Sign Language. Aspects of deafness are covered through an off-campus field experience. Prerequisite: RHB 101, RHB 102.

201-4 Introduction to Rehabilitation
Philosophy, history, and development of rehabilitation. Familiarizes students with areas considered when providing services to people with physical and/or mental disabilities. Students also obtain an understanding of the rehabilitation code of ethics and sociocultural influences.

202-4 Rehabilitation Resources
Prepares students to locate and evaluate the local, state, and federal resources available to meet the needs of persons with disabilities. Students will visit community agencies and volunteer in a community agency of their choice for a minimum of 25 hours during the quarter.

213-1 Introductory Field Experience in Rehabilitation Services
Seventy-five clock hours of supervised field experience intended to acquaint community rehabilitation services students with career options, with the structure and administrative procedures of various human services agencies, and with the application of client-intake procedures. Prerequisite: RHB 201.

214-3 Rehabilitation Services Interviewing
Introduction to the role of the rehabilitation services aide in the client-intake process, and how this process occurs within the organizational structure of human services agencies. Prerequisite: RHB 201.

223-3 Advanced Field Experience in Rehabilitation Services
Seventy-five clock hours of supervised field experience intended to provide community rehabilitation services students with in-depth knowledge of the structure and processes of a selected agency, the job description duties of the rehabilitation services aide within this agency, and the special social, personal, and vocational needs and problems of the target client population. 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 that commonly require rehabilitation intervention. Considers how disabling conditions impact vocational and social activities of daily living. Attention given to the pharmacological aspects of treating disabilities. Prerequisite: BIO 105, 106, 107, RHB 201.

303-4 Strategies for Employing Persons With Disabilities
Overview of job development and job placement techniques. Various methods to access the job market through job seeking skills, résumé preparation, occupational information, and job analysis are discussed. Attention is given to attitudinal and architectural barriers that people with disabilities may encounter in their job search process. Prerequisite: RHB 201, 301.

304-4 Rehabilitation Casework
Assists students in acquiring skills in interviewing, case recording, writing rehabilitation plans with appropriate justifications, and case management. Prerequisite: RHB 201, 202, 301.
305-4 Substance Abuse: Societal and Human Issues
Provides an overview of the social, cultural, and psychophysiological effects of substance abuse. Emphasis is on alcoholism and other popular mind-altering drugs. Prerequisite: RHB 201, 301 or permission of instructor and junior standing.

370-1 to 3 Independent Study/Minor Problems in Rehabilitation
Independent study in areas of interest to students that are not readily available in any existing course. Topics vary. May be taken for letter grade or pass/unsatisfactory.

401-4 Mental Retardation/Psychiatric Disabilities
Introduction to the etiology, signs, symptoms, and rehabilitation of people with mental retardation/psychiatric disabilities. Prerequisite: RHB 201, 301, PSY 311.

402-4 Vocational Evaluation/Assessment
Assists students in developing knowledge and skills essential to the interpretation and use of diagnostic information. Vocational evaluation, history, process, requirements, techniques, and reports are examined. Hands-on experience in various vocational evaluation settings is an integral part of the course. Prerequisite: RHB 201, 202, 301.

403-4 to 12 Rehabilitation Practicum
Rehabilitation community field placement will assist the integration of skills learned throughout the program. Requires 400 clock hours of field work supervised by faculty and the agency, plus processing time. Prerequisite: RHB 201, 202, 301, 303, 304, 401, 402, 407, CNI 461, 467 and the currently required grade point average.

404-4 Independent Living/Rehabilitation Technology
Discusses the history and current philosophy/application of the independent living movement and rehabilitation technology in rehabilitation services. Process will be addressed in this course. Prerequisite: RHB 201, 301, 303, 401, 402.

407-4 Principles of Rehabilitation Counseling
Focuses on the development of basic skills and attitudes associated with rehabilitation counseling. Interview style and format are examined along with listening and responding techniques associated with holistic approaches. Prerequisite: RHB 201, 202, 301, 304, CNI 461.

432-3 Death, Dying, And Grieving
(Also listed as HPR 432) A course in death, dying, and grieving for health educators who deal with grief and loss in situations such as death, dying, survivorship, children and loss, second marriages, suicide, and other events of trauma.

470-1 to 3 Special Topics
Special workshop courses to meet the needs of in-service 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.

499-1 to 4 Special Problems in Rehabilitative Sciences
Enables students to explore selected research topics related to the rehabilitation of various patient populations. Students and faculty advisors interact to establish specific course requirements.

**Religion/REL**

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

204-3 Great Books: The Bible and Western Culture
Study of selected Biblical writings viewed in their original cultural contexts and chosen to reflect the varieties of Biblical literature, the Bible’s relationship to various societies, and its role in the development of Western culture.

205-3 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.

206-3 Eastern Religions
General introduction to the major religious traditions of South Asia and East Asia: Hinduism, Buddhism, Confucianism, Taoism, and Shintoism.

207-3 Western Religions
General introduction to the major religious traditions of Judaism, Christianity, Islam, and other selected religious traditions.

208-3 Contemporary Issues in Religion
Study of selected problems, ideas, and religious developments that have become important in contemporary society.

220-3 Hebrew Scripture (Old Testament)
Introduction to the literature, history, and religion of ancient Israel.

221-3 Between the Testaments
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 B.C.E.), including the Dead Sea Scrolls.

222-3 Literature and Religion of the New Testament
Introduction to the literature, history, and religion of early Christianity.

231-3 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.

235-3 Introduction to the Afro-American Religious Experience
Survey of the black American religious experience from the colonial era to the present. Examines what black American religion is and the role it plays in the sociopolitical life of Afro-Americans.
245-3 World Religions
Comparative study of the role of religion in cultures and societies on the international scene.

246-3 African Religion
Focuses on the religious concepts and practices of premodern African tradition.

270-3 Approaches to Religious Ethics
Examination of various religious ethical systems from diverse cultural situations.

280-3 Philosophy of Religion: Faith and Reason
(Also listed as 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, and karma and reincarnation. Issues are discussed on the basis of selected texts on faith and reason.

281-3 Philosophy of Religion: Contemporary Western Survey
(Also listed as PHIL 281.) 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.

290-3 Current Problems
Investigation and discussion of a single current problem in the field of religion.

300-3 Religion in America
Concentrates on specific segments of American religious life. Focuses on one or more distinctive religious groups or movements in the context of American history and culture. (Previously listed as REL 230.)

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.

315-4 Christianity
Examination of the structures of religious experience that 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.

316-4 Judaism: Faith and People
Examination of Judaism as a religious faith and people, with special reference to formative historical, social, ethnic, and cultural factors.

318-4 Contemporary Jewish Thought
Examination of the major themes and issues in the works of contemporary Jewish thinkers (e.g., Borowitz, Herberg, Fackenheim, Kaplan, Rothchild, Heschel, Rubenstein, and Weisel).

321-4 Religions in the Biblical Period
Examination of selected religious movements and/or problems in the Biblical period, and their interconnectedness and mutual influences.

322-4 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.

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.

331-4 New Religious Movements in America
Considers a variety of new religious movements in America, including Shakers, Mormons, Seventh-Day Adventists, and Jehovah's Witnesses.

332-4 Women and Religion in America
General examination of the role women have played in American religious history, with special reference to the diversity of women's religious experiences.

340-4 Topics in Asian Religion
Studies in the religious dimension of Asian cultures with attention to historical, social, and aesthetic perspectives.

341-4 Islam
Study of the origin and development of Islam including contemporary issues and problems.

344-3 Religion in Japanese Life
Examination of the role of religion in Japanese culture and society with attention to both historical development and current issues.

357-4 Understanding Death
Basic issues in death and dying using resources from human sciences and humanities in religious perspective.

361-4 Religion and Society
(Also listed as SOC 361.) General treatment of religion as a social institution, examining the influence of religious ideas and organizations on other social institutions and the influence of society on religion.

362-3 Anthropology of Religion
(Also listed as 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.
363-4 Religion and Psychology
Introduction to selected themes, issues, and problems in the interaction of religion and psychology. Differences of view are considered.

365-4 Religion and Politics in America
(Also listed as PLS 315.) General examination of both the historical and the contemporary relation between religion and politics in the United States, with special reference to church/state separation.

370-4 Studies in Ethics
Special topics for intensified study of the ethical dimensions of a particular religious tradition or for concentrated study in theoretical or practical ethical problems. Topics vary.

371-4 Business Ethics
(Also listed as PHIL 371.) Case studies and discussion of ethical issues involved in business transactions and management.

378-4 Ethics and Medicine
(Also listed as PHIL 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.

382-4 Philosophy of Religion: Process
(Also listed as PHIL 382.) Realism and the revolt against idealism. Cross-disciplinary analysis of major contemporary philosophers and the implications of their theories for religion. Focus on Alfred North Whitehead.

383-4 Philosophy of Religion: Secular
(Also listed as PHIL 383.) Cross-disciplinary analysis of modes of human awareness through which religious meaning is expressed (sensation, morality, beauty, reason, and human relations). Examination of presuppositions of contemporary secular religion in existentialism.

390-4 Studies in Selected Subjects
Problems, approaches, and topics in the field of religion. Topics vary.

394-4 Existentialism
(Also listed as PHIL 394.) Representative writers of the existentialist movement.

435-4 Black American Religious Thought
Analysis of black American religious thought through critical study of the writings of selected figures who have helped shape black religion from 1780 to the present.

443-4 Asian Religious Philosophy
(Also listed as PHIL 443.) 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.

456-4 Religious Themes in Literature
(Also listed as ENG 460.) Provides 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.

479-3 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.

487-4 Evolution, Religion, and Ethics
(Also listed as BIO 417.) Introduction to the biological, philosophical, theological, and ethical aspects of evolution.

490-1 to 4 Independent Reading
Topics vary.

494-1 to 4 Undergraduate Research in Religion
Intensive consideration of problems and issues in a given area of religious study; topics determined in consultation between students and department. Graded pass/unsatisfactory at discretion of department.

497-4 Senior Project
Guided research culminating in a major paper on a topic chosen by the student and the instructor. Students develop a comprehensive bibliography, prepare a detailed outline, and write and revise the final project.

498-3 Workshop
Intensive study of selected problems (e.g., the teaching of religion in the secondary school, medical ethics) to meet particular needs of participating students. Topics vary.

Russian/RUS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-4, 102-4, 103-4 First-Year Russian
Study of vocabulary and structure of the Russian language; practice in conversation, reading, and writing.

201-4 Second-Year Russian
Grammar review, reading, and discussion of selected texts with practice in speaking and writing. Prerequisite: RUS 103.

202-4 Second-Year Russian
Grammar review, reading, and discussion of selected texts with practice in speaking and writing. Prerequisite: RUS 201 or equivalent.
203-4 Second-Year Russian
Grammar review, reading, and discussion of selected texts with practice in speaking and writing. Prerequisite: RUS 202 or equivalent.

Science and Math/SM
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

145-3 Foundations in Scientific Literacy and Problem Solving
Fundamental concepts in science treated in an interdisciplinary way and integrated with mathematics. Emphasis on development of science process skills and problem-solving abilities. Introductory experience to a constructivist and cooperative learning environment. Prerequisite: MTH 126 or 127 or level 4 on math placement test.

198-2 Introduction to Science and Mathematics
Introduces students to curriculum, activities, services, and associations within the College of Science and Mathematics. Emphasis is placed on developing study skills, critical thinking processes, and career preparation in science and math. Graded pass/unsatisfactory.

199-2 to 6 Topics in Science and Mathematics

445-3 Projects in Science
An exercise in the application of data collection and analysis to an assigned group project, reflecting aspects of the four basic sciences. 1 hour meeting and outside project. Prerequisite: PHY 245, CHM 245, GL 345, BIO 345.

Social Work/SW
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

270-4 Social Work as a Profession
Introduction to the profession: historical development, value base, social systems perspective on social problems, and major fields of practice. Includes required knowledge, skills, and values; critical thinking; problem solving; self-awareness; and appreciation of racial, ethnic, and cultural pluralism.

271-4 Social Welfare and Social Services
Study of social welfare and social services in society; introduction to generalist social work practice; continued career testing. Agency-based field project required. Prerequisite: SW 270.

375-4 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. Prerequisite: SW 271.

380-4 Basic Practice Theory
Foundation sequence of generic social work practice theory. Problem assessment, data collecting, data analysis, intervention methods, and evaluation procedures. Introduction to task-centered approach. Prerequisite: SW 271.

389-2 to 4 Seminar on Special Problems in Social Work Practice
Selected topics related to current issues in social work practice: readings, research, and discussion.

394-2 to 4 Readings in Social Work
May be taken for letter grade or pass/unsatisfactory.

462-4 Social Gerontology
(Also listed as 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
Continuation 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 270, 271, and 380.

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. Prerequisite: SW 375, 380, and 490.

480-3 to 4 Gerontology Practicum
Supervised learning under direction of faculty and agency staff. Ten weeks/20 hours per week, or twenty weeks/10 hours per week. Prerequisite: SW 462/SOC 462.

481-4 Generalist Practice with Individuals
In-depth study of generalist social work practice theory for the enhancement of social functioning of individuals. Prerequisite: SW 375, 380, and 490.

482-4 Generalist Practice with Groups
In-depth study of generalist social work practice theory for the enhancement of social functioning of small groups. Prerequisite: SW 375, 380, and 490.

483-4 Generalist Practice with Families
In-depth study of generalist social work practice theory for the enhancement of family social functioning. Prerequisite: SW 375, 380, and 490.

484-4 Generalist Practice with Organizations and Communities
In-depth study of generalist social work practice theory for the enhancement of social functioning in social welfare organizations and communities. Prerequisite: SW 375, 380, and 490.
**487-4 to 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. Prerequisite: SW 487.

**488-4 Practicum in Social Work II**
Application of theory to practice in agency settings. Individual supervised learning experiences and on-site seminars under direction of instructor and agency staff. Prerequisite: SW 487.

**489-4 to 6 Practicum in Social Work III**
Application of theory to practice in agency settings. Individual supervised learning experiences and on-site seminars under direction of instructor and agency staff. Prerequisite: SW 487.

**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. Prerequisites: SW 271; for 490, SW 490.

**Sociology/SOC**

**Note:** See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

SOC 200 is prerequisite for all 300- and 400-level courses.

**200-3 Social Life**
Introduction to the processes through which individuals become members of groups, organizations, institutions, and societies, and how human social interactions lead to changes in social life and structures.

**201-3 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?

**202-4 SIMSOC (Simulated Society)**
SIMSOC is a learning game designed to complement 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: SOC 200.

**203-2 SIMSOC II**
Builds on experience of SIMSOC I and analyzes societal processes: small group interaction, stratification, leadership roles, political and economic philosophies, and minority relations. Students simulate a society and analyze experience. Graded pass/unsatisfactory. Prerequisite: SOC 202.

**204-2 Sociology Career Seminar**
Designed to help students think about their futures, become familiar with career options, relate theoretical work to practical concerns, and plan their course work with an awareness of graduate needs.

**210-3 Courtship and Marriage Analysis**
Analysis of family behavior in the United States stressing courtship, preparation for marriage, developmental tasks in marriage, child rearing, and marital tension.

**221-3 Exploring Social Issues**
Focuses on specific social problems. Topics vary.

**231-3 Violence**
Defines violence, explores patterns at individual and group levels, and examines explanations for change in quantity and intensity. Areas covered include criminal violence, domestic violence, rape, homicide, and genocide.

**301-4 History of Sociological Theory**
Historical study of the emergence and development of sociological thought from Adam Ferguson and Montesquieu through the eighteenth century; emphasis on the basic writings of Comte, Spencer, Marx, and others.

**303-4 Contemporary Sociological Theory**
Analyzes contemporary sociological theory (structural functionalism, symbolic interactionism, critical theory, and phenomenological theory) with a focus on the interpretation of society and major figures of the twentieth century.

**306-4 Introduction to Research Methods**
Philosophical and applied issues of sociological investigation. Various means of collecting sociological data are analyzed. Prerequisite: SOC 200 or 201.

**310-4 Sociology of Gender**
Introduces the theoretical and conceptual underpinnings of women's studies through exploring the changing historical, cultural, and social expressions of gender. Also examines social roles, institutions, policies, and movements which affect women.

**312-1 to 6 Workshop in Current Problems**
Intensive study of a particular problem area using professionally qualified personnel from the academic and community environments. Titles vary. May be taken for letter grade or pass/unsatisfactory.

**313-1 Intensive Alcohol Education Program**
Students are observer/participants in the intensive alcohol education program which presents individuals with factual material about the effect of substance abuse, both physically and socially, so that they can make knowledgeable decisions about their usage. Graded pass/unsatisfactory.
Course Descriptions

314-1 to 6 Workshop in Current Problems
Intensive study of a particular problem area using professionally qualified personnel from the academic and community environments. Titles vary. May be taken for letter grade or pass/unsatisfactory.

315-1 Drug and Alcohol Intervention Workshop
Participant observation of the intervention and treatment of drug and alcohol problems including therapy and counseling groups, client/therapist contact, and professionals practicing intervention and confrontation techniques. May be taken for letter grade or pass/unsatisfactory. Prerequisite: one of the following: CNL 461; PSY 311, 331; RHB 301, 407; SW 270, 481, 482, 483; SOC 320, 461; premedical concentration; nursing concentration; or permission of instructor.

320-4 Sociology of Deviant Behavior
Extensive exploration of the various sociological approaches to the study of deviance and social disorganization with an emphasis on contemporary sociological theory and research. Prerequisite: SOC 200 or 201.

330-4 Criminology
Survey of crime, some causal theories, and attempts at crime prevention in the United States. Prerequisite: SOC 200 or 201.

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 in its historical and present context. Emphasis on the interrelationship between individuals, the family, and other institutions.

341-4 Social Inequality
Structures, theories, and consequences of social inequality with special emphasis on the United States.

342-4 The Demography of Human Populations
Introduction to factors influencing the structure and growth of human populations and the social consequences of population change. Patterns of fertility, mortality, and migration in today's societies are emphasized, and methods and materials used to study populations are presented.

345-4 Social Change
Explanations of social change in modern societies. Emphasis on identification of sources of change, effects of change throughout society, major trends, and issues for the future.

350-4 Sociology of Work
Investigation, analysis, and discussion of contemporary theories focusing on the relationship of the individual to work. Prerequisite: SOC 200 or 201.

360-4 Sociology of Family
Sociological analysis of family development over its life cycle. Involved is the relationship of the family to society and the individual. Topics include courtship, marriage, parenthood, adulthood, and aging. Prerequisite: SOC 200 or 201.

361-4 Religion and Society
(Also listed as REL 361.) General treatment of religion as a social institution examining the influence of religious ideas and organizations on other social institutions, and the influence of society on religion.

363-4 Sociology of Education
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 and others.

390-2 to 4 Directed Readings in Sociology
Readings in areas of specialized interest. May be taken for letter grade or pass/unsatisfactory.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of sociology. Topics vary.

406-4 Applications of Research Methods
Advanced course in social research techniques that 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. Prerequisite: SOC 306.

420-4 Sociology of Sexual Behavior
Course examines alternative sexual lifestyles and behaviors. Employing the concepts of cultural relativity and ethnocentrism, students learn how sexual relationships are perceived and responded to in contemporary American society. Prerequisite: SOC 200.

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 and Family
Supervised field experience in corrections and family agencies (probation, parole, jail, juvenile, adult, and aging). Requires readings, a log, progress reports, and a paper synthesizing readings and field experience.

439-4 Selected Topics in Problems/Deviance
Topics vary. Prerequisite: SOC 200 or 201.
Course Descriptions

440-4 Bureaucracy and Bureaucrats
Examination of the nature of modern bureaucratic organizations, their place in society, and consequences of bureaucratic forms for their members and society.

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.

443-4 South Africa and Apartheid
An introduction to the social history of South Africa and the system of apartheid. Consider several scenarios regarding the future of South Africa and invites reflection upon past and future U.S. involvement in that country. Prerequisite: SOC 200.

444-4 Urban Sociology
Deals with the role of cities in past and present societies, the social and cultural implications of urban living, and special problems associated with city life. Prerequisite: SOC 200 or 201.

446-4 Neighbors and Communities
What part do the community and the neighborhood play in the social life of modern societies? What makes a good neighborhood, a good community? These and other questions are addressed.

450-4 Stress Management
An investigation and analysis of contemporary theories that suggest an interrelationship between personal stress, distress, varying lifestyles, and a rapidly changing society with transitional values and norms.

461-4 Medical Sociology
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
(Also listed as SW 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
Continuation 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.

489-4 Selected Topics in Social Interaction
Titles vary.

490-2 to 4 Independent Research in Sociology
Field project in an area of interest. May be taken for letter grade or pass/unsatisfactory.

Spanish/SPN
Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

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.

111-4 Essentials of Spanish
Introduction to Spanish with an emphasis on speaking the language.

150-4 Spanish Grammar Review
A thorough review of Spanish grammar with an emphasis on oral practice.

201-4, 202-4, 203-4 Second-Year Spanish
Grammar review, reading, and discussion of selected texts with practice in speaking and writing the language. Prerequisite: For 201; SPN 103 or equivalent. For 202; SPN 201 or equivalent.

311-4, 312-4 Spanish Conversation
Practice in oral use of Spanish emphasizing the culture of the Hispanic world. Prerequisite: SPN 203 or equivalent.

321-4, 322-4 Spanish Composition
Oral and written composition in Spanish; translations from English into Spanish. Prerequisite: SPN 203 or equivalent.

323-4 Spanish Composition
Oral and written composition in Spanish; translations from English into Spanish. Further grammar study. Prerequisite: SPN 203 or equivalent.

331-4, 332-4 Survey of Spanish Literature
Historical survey of Spanish literature. 331: from the beginning to romanticism. 332: romanticism to the present. Prerequisite: SPN 312 and 322 or permission of instructor.

325-4 Business Spanish
An introduction to the language of business Spanish with insight into Spain and Latin America within the global economy. Prerequisite: SPN 203.

333-4, 334-4 Survey of Spanish-American Literature
Reading of prose, poetry, and plays by Spanish-American writers. 333: from pre-Columbian times to romanticism. 334: romanticism to the present. Prerequisite: SPN 312 and 322 or permission of instructor.

361-2 Spanish Phonetics
Study of the vowel and consonant sound system through phonetic method; intonation. Prerequisite: SPN 312 and 322 or permission of instructor.
SPN 312, 322, 332, and 334 or permission of instructor are prerequisites for the following advanced courses:

381-1, 382-1, 383-1 Applied Elementary Spanish Instruction
Spanish majors assist elementary course instructors in conducting classes. For Spanish majors only.

399-1 to 4 Studies in Selected Subjects
Problems, approaches, and topics in the field of Spanish. Topics vary.

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
Topics vary. Conducted in Spanish.

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.

432-4 Seminar in Spanish-American Literature
Intensive study of selected topics in Spanish-American literature. Background lectures, oral reports, and discussions. Topics vary.

441-4 Contemporary Spanish Literature
Readings 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.

450-1 to 4 Undergraduate Research in Spanish
Topics vary.

462-4 The Generation of 1898
Novel, poetry, and theatre of Unamuno, Baroja, and others.

481-4, 482-4 Independent Reading for the Advanced Student
Topics vary.

Statistics/STT

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

160-5 Statistical Concepts
A non-technical introduction to fundamental ideas in statistics. Statistical ideas are introduced through examples, showing how statistics has helped solve major problems in various fields. Prerequisite: MTH 126 or 127 or equivalent or at least level 4 on math placement test.

264-4 Elementary Statistics I
Numerical and graphical methods for finding and summarizing important features of data. Principles of designing experiments for collecting data. Introduction to probability. Use of statistical computing package to apply methods and illustrate concepts. Prerequisite: MTH 126 or 127 or equivalent or at least level 4 on math placement test.

265-4 Elementary Statistics II
Confidence intervals and hypothesis testing introduction. Applications to means, proportions, two-sample comparisons, contingency tables, linear regression, and analysis of variance. Use of statistical computing package to apply methods to data sets. Prerequisite: STT 264.

342-4 Probability and Statistics for Middle School Teachers

360-4 Applied Statistics I
Introduction to probability, random variables and their expectations, some commonly used discrete and continuous distributions, concept of random sampling and sampling distributions. Use of computer software packages for simulating, summarizing and displaying data. Prerequisite: MTH 229 and 230, or equivalent.

361-4 Applied Statistics II
Introduction to statistics, standard statistical methods for estimation of parameters and hypothesis testing, introduction to regression analysis and analysis of variance techniques, exposure to data analysis using packaged computer programs. Prerequisite: For 360, completion of two calculus courses; For 361, STT 360.

363-3 Engineering Statistics
Introduction to probability, distributions, and statistical methods; using calculus to develop the necessary theory. Prerequisite: MTH 232.
367-2 Introduction to SAS
Introduction to the use of the statistical analysis system, a statistical computing package widely used in industry, government, and academia. Prerequisite: STT 265 or equivalent.

386-1 to 5 Independent Reading in Statistics and Probability
Topics vary.

396-1 to 5 Topics in Statistics and Probability
Titles vary. May be taken for letter grade or pass/unsatisfactory.

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 361 (561 or equivalent).

411-4 Applied Time Series
Stochastic models for discrete time series in the time-domain, moving average processes, autoregressive processes, model identification, parameter estimation, and forecasting. Statistical computing software packages are used. Prerequisite: STT 361 or equivalent.

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.

424-4 Statistical Quality Control and Improvement
Statistical process control for attributes and variables data; probability distributions; sampling plans, control charts, statistical control, process capability, process improvement, tolerance intervals, evolutionary operation, and applications. Prerequisite: STT 361 or 363 or permission of instructor.

426-4 Reliability and Life Data
Presentation of important models and methods, and analysis of lifetime and survival data. Prerequisite: STT 361 or equivalent.

428-4 Queuing Theory
Stochastic concept of a queuing process is developed. Theories and applications of single and many server queues are presented. Emphasis on applications in engineering and computer science. Prerequisite: STT 360 or 363 or equivalent.

430-4 Environmental Statistics
The statistical methods suitable for the collection, analysis and the interpretation of the temporal and spatial data arising in environmental studies are discussed. Computer packages for the data analysis are introduced. Prerequisite: STT 265 or equivalent or instructor's permission.

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.

464-4 Biostatistics
Classical statistical techniques for analysis and interpretation of research data with emphasis on biomedical applications. Includes descriptive statistics, distributions, experimental design, ANOVA, regression, correlation, contingency table analysis, and nonparametric procedures.

466-4 Statistical Methods I
Classical statistical techniques for analysis and interpretation of research data with emphasis on the use of packaged computer routines and the use of linear models. Includes basic probability and statistics review; simple, multiple, and polynomial regression; indicator variables in regression; and multiple and partial correlation. Nonparametric methods; analysis of categorical data; and exploratory data analysis. Prerequisite: MTH 253 or 355, STT 265 or 361 or equivalent.

467-4 Statistical Methods II
Continuation of STT 466. Includes analysis of variance, multiple comparisons, factorial experiments, analysis of covariance, and randomized block designs. Exploratory data analysis. Prerequisite: STT 466.

469-4 Introduction to Experimental Design
Techniques of blocking, randomization, replication, and factorial design. Topics include complete and incomplete block designs, confounding, fractional factorial designs, split-plots, response surface methods, parameter design, and hierarchical designs. Statistical software used extensively. Prerequisite: STT 467 or permission of instructor.

486-1 to 5 Independent Reading in Statistics and Probability

492-3 Undergraduate Statistics Seminar
Detailed study of a single statistical topic or problem in practice of statistics chosen by student with approval of the instructor. The student will present the results of study in an expository paper. Seminars/Independent study. Limited to 10 students. Mathematics majors with statistics option only.

496-1 to 5 Topics in Statistics and Probability
Theatre/TH

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

See Motion Pictures/MP and Dance/DAN for additional course listings.

100-1 Musical Theatre Voice
Half-hour musical theatre voice lessons per week for theatre majors only.

102-3 Introduction to Technical Theatre
General survey of technical aspects of theatre including its personnel and organization.

103-2 Vocal Production and IPA for the Actor
For acting majors only. Application of the International Phonetic Alphabet and understanding the physiological structure of the vocal mechanism.

104-1 IPA for the Singing Actor
Basic training in the International Phonetic Alphabet for musical theatre acting majors.

105-1 Vocal Production and IPA
Departmental majors only. Basics of singing and application of International Phonetic Alphabet.

106-3 Basic Music Theory and Piano Skills for Actors I
Introduces basics of rhythm, melody, sight-singing, and musical theatre piano in a group class.

107-3 Basic Music Theory and Piano Skills for Actors II
Second term of course covering basics of rhythm, melody, sight-singing, and musical theatre piano in a group class.

108-3 Basic Music Theory and Piano Skills for Actors II
Third term of course covering basics of rhythm, melody, sight-singing, and musical theatre piano in a group class.

110-1 to 3 Theatre Management Activities
Participation in University Theatre productions; specific assignments determined at initial meeting.

115-1 Singing for the Actor I
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class.

116-1 Singing for the Actor I
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 115.

117-1 Singing for the Actor I
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 116.

120-2 Makeup for the Theatre
Theory and practice of stage makeup. Prerequisite: TH 102.

124-2 Theatre Graphics I: Fundamentals
Drawing for the theatrical designer with emphasis on fundamentals.

125-2 Theatre Graphics I: Media
Drawing for the theatrical designer with emphasis on media. Prerequisite: TH 124 or permission of instructor.

126-2 Theatre Graphics I: Concepts
Drawing for the theatrical designer with emphasis on concepts. Prerequisite: TH 125 or permission of instructor.

141-1 Acting Warmup
Physical and vocal training for freshmen acting majors. Graded pass/unsatisfactory.

142-1 Acting Warmup
Physical and vocal training for freshmen acting majors, second term. Graded pass/unsatisfactory.

143-1 Acting Warmup
Physical and vocal training for freshmen acting majors, third term. Graded pass/unsatisfactory.

144-3, 145-3, 146-3 Acting I
Training imagination, mind, body, and voice of the beginning actor.

147-2, 148-2, 149-2 Acting Aesthetics
Generalized acting course that includes various aspects of movement, vocal technique, improvisation, and scene work. Designed for students who are emphasizing the technical areas of the arts. For technical design majors only. Prerequisite: for 148, TH 147; for 149, TH 148.

157-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

158-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre majors.

159-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

200-2 Rehearsal and Performance
Student actors are directed by faculty in mainstage or studio theatre productions. May be repeated up to 3 credits. Departmental permission and audition required.

210-3 Theatre Technology
Participation in the operation of a production shop. Introduces students to the fundamentals of theatre technology, emphasizing basic processes and materials. Participation in selected department productions required. For B.F.A. technology majors only.

214-3 The Theatre in Western Culture
Introduction to the many arts of the theatre including the roles of the actor, playwright, director, designer, critic, and audience. Selected scripts from representative historical periods are examined as an aid in understanding the theatrical event.
215-1 Singing for the Actor II
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 117.

216-1 Singing for the Actor II
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 215.

217-1 Singing for the Actor II
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 216.

220-3 Stagecraft
Introduction to theory and practice of theatre technology with study of the materials and techniques involved. Includes practice in construction, mounting, and running of productions.

222-2 Theatre Production
Practical study of technical theatre technology with study of the materials and techniques involved. Includes practice in construction, mounting, and running of productions. May be repeated for maximum of 9 credit hours applicable toward degree.

224-3 Theatre Graphics II: Drafting
Introduction to and practice with the basic graphics tools, materials, and techniques used in drafting designs for the theatre.

225-3 Theatre Graphics II: Color
Introduction to and practice with the basic color theories, materials, and techniques used in designing for the theatre.

226-3 Theatre Graphics II: Model Making
Introduction to and practice with the basic tools, materials, and techniques of scale model building for the theatre.

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.

228-3 Scenery Technology
In-depth study of scenery technology and its techniques. Involves the study of standard scenery construction, metalworking, and the application and details of stage rigging and its equipment. For B.F.A. technology majors only. Prerequisite: TH 220.

229-3 Costume Technology
Introduction to the basics of theatre costume technology. Includes fundamentals of construction, aging, dyeing, and distressing of costumes.

240-2, 241-2, 242-2 Movement for the Actor I
Study of physical alignment, improvisation, warm-up methods, and exploration of movement dynamics as they relate to acting. Basic tumbling and pantomime techniques are introduced. For sophomore acting majors only.

243-3, 245-3, 246-3 Acting II
Second year of acting emphasizes character study. Emphasis on audition at the end of spring quarter. Prerequisite: for 244, TH 146.

254-2, 255-2, 256-2 Theatre Speech I
Second year of speech focusing on expansion and strengthening of the actor's voice. Emphasis on clear articulation and proper enunciation of the phonemes of American Standard English. Prerequisite: for 255, TH 254; for 256, TH 255. Corequisite: for 254, TH 244; for 255, TH 245; for 256, TH 246.

257-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

258-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

259-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre majors.

301-3 Introduction to Theatrical Design
Exploration of the collaborative process between director and designers, which results in a specific visual approach to a production. Emphasis on designer progression from script analysis and research to realization of the design. Prerequisite: TH 214 or permission of instructor.

304-4 Dramatic Writing
(Also listed as ENG 304.) Theory and practice of techniques of dramatic writing emphasizing writing of original plays. Prerequisite: ENG 101, 102, 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.

315-1 Singing for the Actor III
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 217.

316-1 Singing for the Actor III
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 315.

317-1 Singing for the Actor III
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 316.
320-6 Applied Theatre Technology I
Practical study in technical execution. Emphasis on daily operation of theatre production facilities and shops. Participation in major department productions required. For B.F.A. design/technology majors only. Prerequisite: completion of 18 credit hours of TH 210, 227, 228, 229, and permission of instructor.

321-3 Scene Painting I
Introduction to the materials and techniques used in traditional scenic painting, from basic skills (including graining, spattering, wet-blending) to the manipulation of light, shadow, and texture to create three-dimensional effects. Prerequisite: TH 225 or permission of instructor.

322-3 Scene Painting II
Further development of the skills taught in Scene Painting I, with emphasis on rendering volume, light, and realistic surface texture. Includes working portraiture, foliage, and rendering of draped fabric. Prerequisite: TH 321 or permission of instructor.

323-3 Scene Painting III
Continued work in trompe l'oeil techniques, emphasizing ability to reproduce accurately from source material. Introduction to the use of applied textures and painting transparencies. Prerequisite: TH 322 or permission of instructor.

324-3 Lighting Design
Study of lighting design and the behavior of light as an expressive medium of theatrical design. Includes project work with an emphasis on professional technique.

325-3 Set Design
Study of scenic design and the dynamics of stage space use. Includes project design work with an emphasis on professional technique and period design.

326-3 Costume Design
Study of costume design for the theatre. Includes project design work with an emphasis on professional technique and period design.

328-3 Decorative Style through the Ages
Development of dominant characteristics of the history of architecture, furniture, and ornamental design and how they relate to abstract elements of taste, design, composition, and color.

329-3 Clothing Style through the Ages
Costume and fashion from prehistoric to modern times. Overview of the history of costume and fashion and how it relates to theatre.

337-3, 338-3, 339-3 Musical Theatre Performance
Scene study class designed to integrate acting training with music and dance skills using major texts from musical theatre.

340-2, 341-2, 342-2 Movement for the Actor II
Basic movement skills such as period movement, dancing, and stage combat as they relate to performance; designed to give the performer total perception and to discover the physical and psychological stimuli for movement. For studio acting majors only. Prerequisite: for 340, TH 246.

344-3, 345-3, 346-3 Acting III
First year of Professional Actor Training program. Must be taken in sequence. All students must receive a grade of "C" or better to continue in sequence. Prerequisite: for 344, TH 246.

347-3 One Person Show
Provides a foundation for the senior thesis project. Elements necessary in the development of a one person show will be taught, concluding in a solo performance. Prerequisite: Must complete all sophomore and junior major courses up to this point.

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 214.

351-3 Stage Management
This course develops the skills required of the working stage manager. Through lecture, discussion, and application, students work problems of stage management through to practical solutions. Department permission required. Prerequisite: TH 214.

352-2 Directing Laboratory
Presentation of a one-act play in the studio theatre for departmental and public audiences. Prerequisite: TH 350.

354-2, 355-2, 356-2 Theatre Speech II
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 354; for 356, TH 355. Corequisite: for 354, TH 344; for 355, TH 345; for 356, TH 346.

357-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

358-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

359-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

360-3 The History of the Theatre I
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.
361-3 *The History of the Theatre II*
Survey of the history and development of theatrical production from the 17th century through the present day. Emphasis on the history of play production.

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 that develop sensitivity, bodily freedom, characterization, and impression.

371-3 *Musical Theatre Score and Libretto Analysis*
Examines a variety of complete texts from the musical theatre to develop music and text analysis skills for acting, directing, or choreography.

372-2 *Musical Theatre History and Literature*
Survey of the history and literature of the musical theatre from opera and operetta through contemporary Broadway productions. Examination of the various popular influences on the form. Includes viewing film and videotaped productions. Prerequisite: TH 371.

373-2 *Musical Theatre History and Literature II*
Survey of the history and literature of the musical theatre from opera and operetta through contemporary Broadway productions. Examination of the various popular influences on the form. Includes viewing film and videotaped productions.

375-3 *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.

390-2 to 4 *Projects in Theatre*
Advanced individual work.

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.

415-1 *Singing for the Actor IV*
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 317.

416-1 *Singing for the Actor IV*
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 415.

417-1 *Singing for the Actor IV*
For acting majors only. All students must have auditioned for and received departmental approval before registering for this class. Prerequisite: TH 416.

420-6 *Applied Theatre Technology II*
Intensive study of selected aspects of technical theatre. Titles vary. Prerequisite: completion of 18 credit hours of TH 320 required.

424-6, 425-6, 426-6 *Advanced Design Studio*
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 students' area of design. Prerequisite: for 425, TH 424; for 426, TH 425.

427-3 *Advanced Stagecraft*
Advanced study of stagecraft practices including complex scenery layout, rigging, power drive systems, and materials. For B.F.A. design/technology majors only. Prerequisite: TH 220, 227, 229.

429-3 *Advanced Theatre Crafts*
Lecture/workshop class with variable topics including property and furniture building, scenic painting, welding, draping, etc. Topics vary.

438-3 *Musical Theatre Thesis Rehearsal*
Preparation of the musical theatre thesis including the technical and production needs for the special thesis production.

439-3 *Musical Theatre Thesis*
Performance(s) of specially created theatre pieces utilizing all musical theatre emphasis majors. This performance may serve as a showcase for theatrical agents and professional casting personnel.

440-2, 441-2, 442-2 *Movement for the Actor III*
Visualization techniques along with specific analysis of the ideas of LeCoq, Marceau, Alexander, Davis, and others. For B.F.A. studio acting majors only. Prerequisite: for 440, TH 342; for 441, TH 440; for 442, TH 441.

444-3, 445-3, 446-3 *Acting IV*
Second year of Professional Actor Training program. Prerequisite: for 444, TH 346.

447-3, 448-3 *Acting Thesis Project*
Intensive work on a final creative performance project. For senior acting studio majors only. Graded pass/unsatisfactory. Prerequisite: TH 444.

450-3 *Studies in Directing*
Provides intensive study of selected aspects of directing for the theatre. Titles vary.

451-3, 452-3 *Directing Thesis Project*
Original directed research culminating in a creative performance project. For B.F.A. directing majors only. Prerequisite: TH 350.
454-2, 455-2, 456-2 Theatre Speech III
Thorough analysis and study of sounds of foreign dialects and regional accents. Students explore transformation of their own voices. Students also learn to vary their stage voices 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.

457-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

458-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

459-2 Singing for the Musical Theatre Actor
Private singing lessons for musical theatre acting majors.

495-3 to 4 Workshop in Theatre
Intensive study of special topics or problems, or intensive experience in theatrical presentation according to particular needs of participants. Titles vary.

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. For B.F.A. theatre majors only.

University Division/UD

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

100-1 College Study Strategies
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. Graded pass/unsatisfactory. (Previously listed as SS 087.)

101-2 Freshman Seminar: The University Experience
Interactive presentation and discussion of college student life and adjustment issues, academic strategies, academic requirements and information, organization of the university, and career development.

University Honors/UH

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

101-1 to 4 Directed Study
Faculty-directed research or reading.

201-3 to 4 Studies in the Humanities
Explores the humanities comparatively, stressing similarities and differences in themes, methods, materials, theoretical constructs, and problems. Focuses 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. Focuses 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.

400-3 to 4 University Honors Seminar
Emphasis on broadly interdisciplinary topics or issues. Topics vary.

Urban Affairs/URS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

311-4 Introduction to Urban Affairs
Interdisciplinary introduction to general field of urban affairs. Reviews idea of the city and meaning of urban life.

316-4 American Urban History
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.

317-4 Urban Planning I: Introduction to Urban Planning
(Also listed as GEO 317.) 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.

318-4 Urban Planning II: Principles of Planning
(Also listed as GEO 318.) 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 determinants of future urban structure. Prerequisite: URS 317.

321-4 City Politics
(Also listed as PLS 321.) Governments and politics of metropolitan regions, government structure and functions, and interest and power relations.

345-4 Public Administration
(Also listed as PLS 345.) Nature and scope of public administration; administrative law; and public interest in the administrative process.
346-4 Public Personnel Administration
(Also listed as PLS 346.) Methods of employment, training, compensation, and employee relations in various levels of civil service. Examines organizations of public employees.

399-4 Studies in Selected Subjects
Problems, approaches, and topics in the field of urban affairs. Topics vary.

410-4 Urban Empirical Research
Introduces students to research and data collection methods used to explore and explain urban issues. Preparation course for URS 411 and students interested in empirical research. Investigates what makes research useful, valid, and ethical. Requires evaluating and developing research designs.

411-4 Seminar in Urban Affairs
Includes development of a major research paper and a bibliography in urban affairs. Prerequisite: URS 311 and 410.

412-4 Cities and Technology
Deals with the evolving relationship between technology and urban growth, physical form, government, and politics. Explores how "technological fixes" for complex urban problems have shaped urban development and politics.

414-4 Urban Fiscal Administration
Examines local fiscal institutions and introduces analytical tools for designing and evaluating fiscal policies. Reviews financial reporting and accounting, the municipal bond market, pension systems, state and local taxes, user charges, and intergovernmental relations.

415-4 Community Development I
Focuses on the importance, the profession, and the practice of community development. Introduces theories of community and development and studies current neighborhood programs and policies.

416-4 Community Development II
Examines three fundamental organizing strategies—self-help, technical assistance, and conflict—which are used to improve a community's quality of life. The course combines classroom learning and field observation. Prerequisite: URS 415 is recommended, but not required.

417-4 Public Sector Labor Relations
Examines collective bargaining, the negotiation process, impasse resolution, and contract and grievance administration in local government.

420-4 Public Safety Administration
Policing, corrections, fire, emergency medical services, and emergency management systems will be examined to provide an understanding of the services offered, technologies used, problems faced, and alternatives available in each of the areas.

423-4 Issues in Urban Administration
Examines issues and topics related to the administration of urban nonprofit organizations, community development agencies, and local governments. Titles vary.

424-4 Issues in Urban Planning
Examines various issues related to planning urban environments. Topics may include housing, funding nonprofit organizations, strategic planning, and economic development action plans.

425-4 Issues in Urban Development
Examines issues that impact urban development such as housing, pollution, and privatization. Emphasizes an approach for understanding the issues and formulating effective responses.

427-4 Urban Policy Analysis
(Also listed as PLS 427.) Study of the policy development process and its relationship to past and current urban issues. The course focuses on a current urban issue through discussion, reading and research.

446-4 Public Budgeting
(Also listed as PLS 446.) Examination of the major phase of the governmental budget cycle, types of budget, budgetary reform, economic and public impact of government budgeting, decision-making process, and legislative/executive relations in budget formation and implementation.

450-4 Ethics in Public Service
Systematic development of ethics in public service, including individual roles and obligations, values, standards, and codes of conduct.

470-4 Urban Leadership
Examines the leadership role of the urban administrator in formulating programs, policies, and service delivery options. Explores topics such as managing the internal and external environments, improving productivity and effectiveness, and policy/program creation.

475-4 Management of Urban Nonprofit Agencies
Examines the organizational and managerial foundations of nonprofit organizations. Areas such as the nature and mission of nonprofit organizations, evaluating performance, resource development/fundraising, and managing volunteers are explored.

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.

492-4 Urban Affairs Internship
Senior-level internship in which students work in the offices of a local public agency.
Vocational Education/VOE

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

401-1 to 4 Business and Marketing Education
Practicum
Designed to give the student valuable work experience in an actual marketing environment while being supervised/directed by a business or marketing educator. Graded pass/unsatisfactory.

402-1 Field Experience I
Students will be observing the 29 competencies required by the Division of Vocational and Career Education in a vocational laboratory setting. Prerequisite: VOE 460.

403-1 Field Experience II
Students will be observing the 29 competencies required by the Division of Vocational and Career Education in vocationally related classes. Prerequisite: VOE 402.

404-1 Field Experience III
Students will be observing the 29 competencies required by the Division of Vocational and Career Education in applied academic classes. Prerequisite: VOE 403, 461.

405-1 Field Experience IV
Students will be observing the 29 competencies required by the Division of Vocational and Career Education and will be placed in vocationally funded employability and entrepreneurship classes. Prerequisite: VOE 404, 462.

406-3 Survey of Workforce Education
An overview of the instructional programs in workforce education and their administration at the national, state, and local levels. Current legislation, school-to-work initiatives, tech prep, and trends affecting workforce programs are addressed and explored.

407-3 Workforce Education: Methods and Strategies in Transition to Work
The selection, implementation, and evaluation of school-to-work transition models in organizing and managing work and community-based education programs. Topics include career information resources, curriculum materials, and trends influencing work and careers.

408-3 Intensive Business Education
Qualifying course for vocational intensive business education programs. Comprehensive study in developing procedures and principles in program construction, selection, improvement, implementation, and development of program guidelines. Prerequisite: EDT 433 or equivalent.

410-3 Laws and Regulations for Vocational Education
An analysis and discussion of the federal and state laws as they affect the local school agency in operating vocational education programs.

411-3 Workforce Classroom/Laboratory Management
Discusses strategies for selection and arrangement of learning activities in the classroom and laboratory setting, procedures for safety, handling and storage of materials and supplies, student personnel systems, records and reports, maintenance of equipment, rotation of assignments, and student evaluation.

412-3 School-Community Relations
A study of the role of the vocational school in the community including vocational school publics, theories of community power structure and the vocational school with emphasis on methods of communication.

413-3 Introduction to Cooperative Education
Designed to present the basic fundamentals of establishing and operating a cooperative program following state and federal guidelines for work/study students.

414-1 to 3 Teaching in a Cooperative Education
Program I
A study of the methods used in the operation of programs that are vocationally cooperative, including the coordination of classroom related instruction with on-the-job experience. Includes the development and use of a variety of individualized methods of instruction as well as group procedures. Prerequisite: VOE 413.

415-1 to 3 Teaching in a Cooperative Education
Program II
A study of the methods used in the operation of programs that are vocationally cooperative, including the coordination of classroom related instruction with on-the-job experience. Includes the development and use of a variety of individualized methods for at-risk students who are academically, economically, or socially disadvantaged. Prerequisite: VOE 414.

416-1 to 3 Teaching in a Cooperative Education
Program III
A study of the methods used in the operation of programs that are vocationally cooperative, including the coordination of classroom related instruction with on-the-job experience. Includes the development of a course of study and curriculum guide appropriate for work study students. Prerequisite: VOE 415.

417-1 to 8 Update Occupational Skills and Knowledge
Provides the opportunity for the student to upgrade occupational proficiency and technical knowledge through business or industrial experiences or supplemental training for the purpose of improving instruction.

418-3 Historical and Philosophical Foundations of Vocational Education
Provides an introduction to the historical and philosophical antecedents to the present day vocational and technical education. It examines social influences which have affected legislation
which supports vocational and technical education. Basic principles are introduced. Current trends and issues in vocational, technical, and career education are examined.

419-2 to 4 Internship in Teaching Vocational Education
A review of teaching methods, observation of practicing teachers planning and presentation skills. This course will provide the practicing teacher the opportunity to update curriculum and teaching skills. Students already employed as vocational teachers must have all other four-year provisional certification requirements completed.

421-3 Classroom Management in Workforce Education
Current practice and innovation in the study of discipline models and their application in the classroom. Topics include the legal implications of classroom management.

422-3 Supervision of Vocational Education
Development of supervisory skills in vocational education. Stresses human relations, basic management, and leadership skills in program inauguration and operations.

423-3 Practicum for the Development of Teacher Leaders
Observation, supervised leadership, and administrative experiences will be offered in a variety of appropriate settings. Students will be assigned to work as interns in a school setting under the joint supervision of school and university personnel.

425-3 Organization and Administration for Vocational Education
Study of the organization of vocational education at the national, state, and local levels exploring the relationships existing between the various agencies. This course is a core requirement for a baccalaureate degree in vocational education.

426-3 Adult Vocational Education
An investigation of vocational education programs for adults, including the curriculum, special methods, and the development of curriculum materials suitable to such programs.

431-3 Evaluation of Student Performance in Workforce Education
Evaluation of student learning and performance including forms of measurement and interpretation of data.

451-3 Introduction into Workforce Education
Provides students with a foundation for teaching workforce education competencies, philosophy, and instructional organization. Development of integrated workforce instructional plans is a major emphasis. Prerequisite: VOE 471.

452-3 Workforce Teacher Performance Assessment
A program of teacher assessment using three assessment methods, direct observation of classroom practice, review of written documentation prepared by the teacher, and semi-structured interviews before and after the observation. Prerequisite: VOE 471, 451, 421, 431, 472, 473, 474, 475, 469, 458, 411.

455-3 Laboratory Safety and Accident Prevention for Vocational Teachers
To develop an awareness of safety as well as the prevention of accidents in industrial shops and laboratories. Prerequisite: Trade and industrial majors or permission of instructor.

456-3 Vocational Student Organizations
An analysis of vocational youth organizations with emphasis on planning and conducting such programs.

458-3 Selection and Organization of Workforce Curriculum
Provides workforce educators the competencies necessary to identify, select, and organize curricular models and resources to develop a program course of study.

459-3 Developing Competency-Based Curriculum Materials
Provides the vocational teacher with skills to develop individualized competency-based education from new or previously developed curriculum.

460-3 Vocational Teaching Competencies I
Covers basic competencies of teaching for beginning vocational teachers.

461-3 Vocational Teaching Competencies II
Covers basic competencies of teaching for beginning vocational teachers, including lab management and evaluation. Prerequisite: VOE 460.

462-3 Vocational Teaching Competencies III
Covers basic competencies of teaching for beginning vocational teachers, including individualized learning styles and performance in practice teaching situations. Prerequisite: VOE 460.

463-3 Methods for Incorporating Academic Skills in the Vocational Program
An analysis of occupational tasks and competency lists to identify related math, science, or communication skills necessary to succeed as workers in modern society. Includes methods of teaching academics as applied to work or laboratory skills or operations.

464-3 to 9 Methods and Strategies for At-Risk Students
This course focuses on helping teachers develop skills in working with at-risk students enrolled in their programs. Emphasis will be on emotionally, academically, and economically disadvantaged risk students, examining the impact of culture on students and teachers and exploring alternative teaching strategies and program modifications.
Course Descriptions

465-3 Workforce Education: Employability Skills and Entrepreneurship
Designed to present current requirements and methods of teaching work/employability, life and leadership skills. Includes strategies, materials, and learning activities to implement employability and entrepreneurship in workforce education programs.

466-3 Vocational Reading Improvement
Techniques of diagnosing reading problems of the secondary vocational students. Assessment of readability of text and technical materials with emphasis on a selection of materials and strategies for individual students.

467-3 Organization and Administration in Marketing Education
The organization, administration, and structure of marketing education as affected by federal and state legislation, local practices and guidelines, and national standards adopted by the profession. Prerequisite: ED 214 through 221 or equivalent.

468-4 Methods of Teaching Marketing Education
Selection, organization, and presentation of subject matter in high school and adult extension programs. Methodology and teaching techniques will be emphasized through theory and practice. Participation experience required during enrollment in course. Prerequisite: ED 214 through 221 or equivalent. Corequisite: ED 323.

469-3 Coordination Techniques in Workforce Education
Effective coordination strategies and procedures in the administration and management of cooperative programs in high schools, and in adult and postsecondary education.

470-1 to 4 Workshop in Vocational Education
Intensive practical study in vocational education. May be taken for letter grade or pass/unsatisfactory.

471-8 Introduction into Workforce Teaching
The development of basic cognitive and performance skills in pedagogy required by new workforce teachers to earn a vocational teacher license.

472-3, 473-3, 474-3 Supervised Teaching in Workforce Education 1, II, III
Development of basic knowledge, skills, and attitudes required for vocational certification of new, noncertified vocational teachers. Prerequisite: for 472, VOE 471; for 473, VOE 472; for 474, VOE 473.

475-4 Workforce Teaching Follow-up Workshop
Refinement of curriculum development, motivation, leadership, and human relations skills required by employed workforce education teachers. Prerequisite: VOE 471, 472, 473, 474.

476-1, 477-1, 478-1 Inservice Education IV, V, VI
Development of basic knowledge, skills, and attitudes required for vocational certification of new noncertified vocational teachers. Prerequisite: for 476, VOE 471, 472, 473, 474, 475; for 477, VOE 476; for 478, VOE 477.

479-3 Clinical Project in Vocational Education
Addresses special problem areas associated with motivating students, classroom management, discipline, handicapped and disadvantaged students, teacher liability, teaching and learning principles, instructional strategies, evaluation, advisory committees, curriculum, lesson planning, and/or safety. Prerequisite: VOE 474.

481-3 Curriculum in Marketing Education
Preparation, evaluating, and organizing instructional material and the development of curriculum and experiences for high school marketing education cooperative classes and adult marketing education courses. Prerequisite: ED 214 through 221; VOE 467.

Women’s Studies/WMS

Note: See quarterly class schedule or departmental advisor for further enrollment restrictions, requirements, or special course information.

200-4 Approaches to Women’s Studies
(Also listed as PLS 225.) Introduces historical and contemporary feminist thought and explores the importance of gender as a category of analysis to understand social, cultural, political, and economic forces.

399-4 Studies in Selected Subjects
Problems, approaches, and topics in the field of women’s studies. Titles vary. Topics vary. May be taken for letter grade or pass/unsatisfactory. Prerequisite: WMS 200 or permission of instructor.

498-1 to 4 Independent Field Experience
Supervised individual projects that may involve internships with women’s organizations or other field experiences. Titles vary. May be taken for letter grade or pass/unsatisfactory. Prerequisite: WMS 200 or permission of instructor.

499-1 to 4 Independent Study
Supervised individual research on selected topics. Arranged between students and faculty member directing the study. Titles vary. May be taken for letter grade or pass/unsatisfactory. Prerequisite: WMS 200 or permission of instructor.
TECHNICAL COURSE DESCRIPTIONS
Engineering Technology/TEG

141-2 Development of Engineering and Technology
Historical perspective of the development of engineering, science, and technology, including the interrelationship of technology and society.

145-4 Engineering Drawing/CAD I
Basic concepts of engineering drawing applied to manual and computer-aided drafting. Orthographic projection to produce complete multiview drawings. Computer basics for drawing set-up, construction, and file management. 2 hour lecture, 4 hours lab. Prerequisite: TEG 145 or permission of instructor.

146-4 Engineering Drawing/CAD II
TEG 145 continuation. Orthographic projection techniques are expanded to include sectional, auxiliary, and pictorial views. CAD concepts expanded to dimension styles, blocks, x-refs, paper and model space, UCS, and other topics. 2 hour lecture, 4 hours lab. Prerequisite: TEG 145 or permission of instructor.

147-4 Engineering Drawing/CAD III
Design concepts applied to specific topics: threads, cams, weld representations, geometric dimensioning and tolerancing, developments, and descriptive geometry. Student will produce assembly, detail, and pictorial drawings. 2 hour lecture, 4 hours lab. Prerequisite: TEG 146 or permission of instructor.

150-3 Manufacturing I
An introduction to many of the basic tools, machines, and measuring instruments used in the manufacturing industry. Emphasizes safety in the operation of industrial metalworking equipment, understanding material cutting science, and logical process decisions. Lab work emphasizes turning operations and permanent metal joining techniques. 2 hours lecture, 2 hours lab. Prerequisite: TMT 113 or permission of instructor.

151-3 Manufacturing II
A continuation of TEG 150. Course involves further discussion of manufacturing processes as well as hands-on machining experience. Lab work emphasizes milling operations, welding operations, and EDM machining. 2 hours lecture, 2 hours lab. Prerequisite: TEG 150 or permission of instructor.

152-4 Automated Manufacturing I
An introduction to the operation and programming of computer numerically controlled equipment. The student will learn the process of writing and editing CNC programs and the basic principles of CAD-CAM software operation. 2 hours lecture, 4 hours lab. Prerequisite: TEG 150 or permission of instructor.

153-4 Automated Manufacturing II
A step-by-step process through the operation of computer-aided-manufacturing software to manipulate part programs and produce standard CNC code. Uses the basic principles of CAD for product design and CAM to set up tool paths, offsets, and other required information to produce the CNC codes and manufacture the parts. 2 hours lecture, 4 hours lab. Prerequisite: TEG 152, TMT 114, or permission of instructor.

160-4 Fundamentals of AC/DC Electronics
Surveys basic concepts of electricity, voltage, power and energy, symbology per industry standards, and series, parallel and combination circuits and their applications. Introduction to AC quantities, including magnetic, capacitive and inductive quantities, and the fundamental operation of motors and generators. 2 hours lecture, 4 hours lab. Prerequisite: TEG 155 or permission of instructor.

161-4 Industrial Control Circuits
Introduction to semiconductor theory fundamentals and applications, AC/DC fundamentals using motors and controlling circuits, ladder diagrams, sequential analysis and evaluation of symbology used in control circuits, and basics of programable logic controllers are introduced. 2 hours lecture, 4 hours lab. Prerequisite: TEG 160 or permission of instructor.

201-4 Statics
Forces, resultants, components, moments; equilibrium of particles and rigid bodies; analysis of structures; centroids and moments of inertia. Prerequisite: TMT 115; PHY 101, 111.

202-4 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. 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. Prerequisite: TEG 202.

204-4 Machine Design I
3D design with solid modeling. Creation of primitives, complex solids, solid model editing, 2D extraction and extrusion. Production of both engineering and pictorial drawings. Engineering aspects of solid model design. 2 hours lecture, 4 hours lab. Prerequisite: TEG 147 or permission of instructor.

205-4 CAD/CAM Operations
Studies the relationship of CAD and CAM operations. Student will use 3D models as a database for automated code generation and manufacture of products on standard CNC machines. 2 hours lecture, 4 hours lab. Prerequisite: TEG 147 or permission of instructor.

209-3 Fluid Mechanics
Basic study of hydraulics and pneumatics. Applications of hydraulic principles to industrial
control systems and compressed air systems to common industrial control circuits. Prerequisite: PHY 101, 111; TMT 113.

218-3 Facility Design
Material flow, warehousing, quantitative techniques, estimating, planning, and design of industrial and service facilities with emphasis on material handling, production and office layout, management, personnel, aesthetics, and the environment.

219-3 Industrial Safety
Introduces students to a comprehensive approach to the central factors involved in developing safe practices and conditions. Imparts the ability to set up safety organizations, conduct safety education and training, and recognize the effect of plant layout, mechanical guards, and occupational health hazards on injury rates and accident costs. Includes the economic and engineering aspects of fire protection, personal protection equipment, industrial waste disposal, and the analysis of a safety program.

221-4 Automation and Robotics
Application programming course on automated manufacturing. Robotic programming with pendant and BASIC. Cell interfacing, robot, CNC, and support devices operating in a BASIC programming environment. 2 hours lecture, 4 hours lab. Prerequisite: TEG 205 or TEG 153 or permission of instructor.

295-1 to 4 Independent Study
Directed study on selected topics.

297-1 to 5 Studies in Selected Subjects
Problems, approaches, and topics in the field of engineering. Titles vary. May be taken for letter grade or pass/unsatisfactory.

Technical Accountancy/TAC

210-3, 211-3 Financial Accounting I, II

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, ACC 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: ACC 202.

225-3, 226-3 Tax Accounting I, II
Income tax regulations related to business and individual income tax reporting. Prerequisite: for 225, ACC 203; for 226, TAC 225

295-1 to 3 Independent Study
Directed study on selected topics.

297-1 to 5 Studies in Selected Subjects
Problems, approaches, and topics in the field of accounting. Titles vary. May be taken for letter grade or pass/unsatisfactory.

299-4 Internship
Practical business experience in accounting for qualified students 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 Data Processing/TDP

210-3 Electronic Spreadsheets
Use of the electronic spreadsheet as an integrated program that combines spreadsheet processing, word processing, and data base management software with graphics capabilities. Emphasis on how to save, retrieve, extract data, create a spreadsheet, and use worksheet commands, database commands, and graphic commands. 2 hours lecture, 2 hours lab. Prerequisite: CS 205 or permission of instructor.

295-1 to 3 Independent Study
Directed study on selected topics. May be taken for letter grade or pass/unsatisfactory.

297-1 to 4 Studies in Selected Topics
Problems, approaches, and topics in the field of data processing. Titles vary. May be taken for letter grade or pass/unsatisfactory.

299-4 Internship
Practical data processing experience under the joint planning and coordination of faculty, student, and business representative. May be taken for letter grade or pass/unsatisfactory. Completion of 60 hours of course work required.

Technical English/TEN

085-4 Basic Writing
Helps students develop and improve writing skills. Subject areas include grammar, sentence structure, paragraph development, essay writing, and proofreading. Cannot be applied toward graduation. Graded pass/unsatisfactory.
Technical Finance/TFI

205-3 Business Finance
Introduction to basic concepts, principles, and analytical techniques of financial management. Emphasis on planning and managing assets, and financial structure decisions. Topics include asset management, capital budgeting, cost of capital, financial leverage, 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: ACC 203.

Technical Management/TMG

201-3 Fundamentals of Management
Basic fundamentals of the process of management applied to business organizations. Emphasis on the practical applications of techniques employed by managers at lower and middle organizational levels.

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.

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, incorporation, capitalization and financing requirements, legal requirements, production, and marketing arrangements. Prerequisite: TMG 201 or 210.

290-4 Comprehensive Management
Integrates students' two-year programs and promotes management problem-solving capabilities. Prerequisite: TMG 202, TMK 202, or permission of instructor.

295-1 to 3 Independent Study
Directed study on selected topics.

299-4 Internship
Practical business experience in management for qualified students under the joint planning and coordination of faculty, student, and business representatives. Completion of 60 hours of course work required.

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, MTH 127.

202-3 Basic Marketing II
Practical evaluation of marketing functions relative to the product development, promotion, pricing, distribution, and establishing marketing objectives. Prerequisite: TMK 201.

290-4 Comprehensive Marketing
Integrates students' two-year programs and promotes marketing problem-solving capabilities. Prerequisite: TMG 202 or 210, TMK 202 or permission of instructor.

295-1 to 3 Independent Study
Directed study on selected topics.

299-4 Internship
Practical business experience in retail marketing for qualified students under the joint planning and coordination of faculty, student, and business representatives. Completion of 60 hours of course work required.

Technical Mathematics/TMT

113-4 Technical Mathematics I
An introduction to the real number system and operations with signed numbers; solving first-degree equations; products and factoring of monomials and polynomials; working with solving equations and radicals; and an introduction to right-triangular trigonometry.

114-4 Technical Mathematics II
Includes work with vectors; j operators; logarithmic functions; solving equations; some theory of equations, inequalities, properties of the trigonometric functions, and variations. Prerequisite: TMT 113.

115-4 Technical Mathematics III
Topics covered are variations, progressions, properties of the trigonometric functions, inverse trigonometric functions, and analytical geometry. Prerequisite: TMT 114.
116-4 Technical Calculus
Introduces topics of calculus such as limits, derivative and applications, integration and applications, differentiation of transcendental functions, and methods of integration. Prerequisite: TMT 115.

Technical Office Administration/
TOA

101-1, 102-1, 103-1, 104-1, 105-1, 106-1, Professional Development I, II, III, IV, V, VI
Emphasizes professional development in office procedures, dress, personality, leadership, and other aspects of business etiquette.

110-1 Keyboarding
Basic keyboarding instruction in touch typewriting on an alphanumeric keyboard. May be taken for letter grade or pass/unsatisfactory.

115-3 Business/Office Correspondence
Study of terminology and formats used in business communication: letters, reports, memos, dictation, grammar fundamentals, sentence construction, punctuation rules, and spelling. Prerequisite: ENG 101, OA 212.

223-3 Word Processing Simulations
Simulations in word processing functions using merge, list processing, math, and sort. Covers medical, legal, and executive situations. 6 hours lab. Prerequisite: OA 222.

224-3 Office Procedures I
Integrates 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. Prerequisite: OA 211; TOA 250 or 251 or 252.

225-3 Office Procedures II
Continuation of TOA 224. Prerequisite: TOA 224.

226-3 Office Procedures III
Continuation of TOA 225. Prerequisite: TOA 225.

230-3 Records Management
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.

233-3 Machine Transcription I
Executive, medical, and legal transcription from cassettes, emphasizing skills needed in today's word processing environment. 2 hours lecture, 2 hours lab. Prerequisite: OA 213, 220; TOA 250 or 251 or 252.

234-3 Machine Transcription II
Continuation of TOA 233 including executive, medical, and legal projects. 2 hours lecture, 2 hours lab. Prerequisite: TOA 233.

235-3 Calculator Applications
Operation of electronic display and printing calculators with business math and office applications. 2 hours lecture, 2 hours lab.

241-3 Beginning Desktop Publishing
Business course using a computer graphic design system to produce typeset-quality text and graphics such as newsletters, letterheads, brochures, and manuals. 2 hours lecture, 2 hours lab. Prerequisite: OA 211 or TOA 110.

242-3 Advanced Desktop Publishing
Continuation of TOA 241 using more advanced features and applications of graphics and software programs. 2 hours lecture, 2 hours lab. Prerequisite: TOA 241.

243-3 Desktop Publishing Applications
An overview of desktop publishing systems using advanced concepts and terminology. Study of the principles of design and the publishing cycle. 1 hour lecture, 4 hours lab. Prerequisite: TOA 241, 242.

250-3 Executive Terminology
Study of executive terminology and other basic aspects of the executive assistant profession. Corequisite: OA 211.

251-3 Legal Terminology
Study of legal terminology and other basic aspects of the legal assistant profession. Corequisite: OA 211.

252-3 Medical Terminology
Study of medical terminology and other basic aspects of the medical assistant profession. Corequisite: OA 211.

255-3 Medical Coding
Includes ICD-9-CM medical coding guidelines that apply in processing insurance and medical claims, including Medicaid and other health plans. Prerequisite: TOA 252.

295-1 to 3 Independent Study
Directed study on selected topics.

297-1 to 5 Studies in Selected Topics
Problems, approaches, and topics in the field of office administration. May be taken for letter grade or pass/unsatisfactory. Titles vary.

299-4 Internship
Practical secretarial experience under the joint planning and coordination of faculty, student, and business representative. Completion of 60 hours of course work required. May be taken for letter grade or pass/unsatisfactory.
Technical Study Skills/TSS

051-1 Reading Comprehension I
Emphasis is placed on improving reading skills, comprehension, concentration, and related vocabulary development. This is accomplished by using individualized instruction in sequenced kits and other related materials. Graded pass/unsatisfactory.

052-1 Reading Comprehension II
Continuation of TSS 051. Graded pass/unsatisfactory.

061-1 Vocabulary Development I
Allows students to proceed at their own pace. Provides students with one-on-one instruction. Students work toward improved vocabulary, concentrating on techniques of unlocking meaning through contextual clues and knowledge of Latin and Greek roots, prefixes, and suffixes. Students formulate data retention cards to master specific or general vocabulary of a discipline/course. Graded pass/unsatisfactory.

062-1 Vocabulary Development II
Continuation of TSS 061. Graded pass/unsatisfactory.

071-1 Speed Reading I
For students interested in becoming a more flexible reader. Emphasis is on refining skills and improving rate, comprehension, and efficiency. Recommended for those students who already read adequately, but desire techniques that will decrease the amount of time spent in reading. Helps determine at what rates different materials should be read. Graded pass/unsatisfactory.

072-1 Speed Reading II
Continuation of TSS 071. Graded pass/unsatisfactory.
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Wang, Hong Assistant Professor of Management Information Systems B.T., 1982, Dalian University of Technology; M.A., 1996, Ph.D., 1998, The Ohio State University

Wang, Weizhen Assistant Professor of Mathematics and Statistics B.S., 1987, M.S., 1990, Peking University; Ph.D., 1995, Cornell University


Warner, Celesta Clinical Instructor of Nursing B.S.N., 1965, University of Michigan; M.S., 1984,
Ball State University

Warrick, Kimberly J. Assistant Professor of Music B.Mus., 1980, California State University Northridge; M.M., 1992, D.A., 1995, University of Northern Colorado

Watamaniuk, Scott Assistant Professor of Psychology B.S., 1985, University of Alberta; M.S., 1987, Ph.D. 1990, Northwestern University

Watson, Frederick Assistant Professor of Management Science B.S., 1987. Ph.D. 1990, Northwestern University


Weber, Robert J. Associate Professor of Physical Medicine and Rehabilitation and Department Chair B.S., 1967, M.D., 1971, The Ohio State University

Weinstein, Larry B. Assistant Professor of Management Science B.S., 1985, University of Cincinnati; M.S., 1988, G.M.I. Engineering and Management Institute; Ph.D., 1996, University of Kentucky

Weisman, Robert A. Professor of Biochemistry and Molecular Biology; Associate Dean, College of Science and Mathematics, Associate Dean for Biomedical Sciences, School of Medicine B.S., 1958, Union University; Ph.D., 1963, Massachusetts Institute of Technology

Weiss, Isaac Professor of Materials Science and Engineering B.S., 1972, M.S., 1974, Technion, Israel Institute of Technology (Israel); Ph.D., 1978, McGill University


Wendt, Ann C. Associate Professor of Management B.S., 1977, M.S., 1980, Ph.D., 1987, University of Utah, SPHR

Wenning, Mary V. Assistant Professor of Urban Affairs B.S.S.W., 1979, M.A., 1989, Ph.D., 1995, The Ohio State University

Wetter, Eldon J. Assistant Professor of Geography, WSU-Lake Campus B.S., 1967, University of Wisconsin at Platteville; M.A., 1969, The Ohio State University

Wharton, Beth Lecturer in English B.S., 1989, M.A., 1991, Wright State University

Wheatly, Michele G. Professor of Biological Sciences and Department Chair B.S., 1977; Ph.D., 1980, Birmingham, U.K.

Whissen, Ann Professor of German; Chair, Department of Modern Languages B.A., 1957, Miami University; M.A., 1961, University of Colorado

Whissen, Thomas R. Professor Emeritus of English B.A., 1955, Kent State University; M.A., 1963, University of Colorado; Ph.D., 1969, University of Cincinnati

White, Mary Lou Professor Emerita of Education B.S., 1955, University of Akron; M.S., 1965, University of Wisconsin; Ph.D., 1972, The Ohio State University

White, Patricia K. Associate Professor of Dance B.A., 1969, Manhattanville College; M.A., 1975, University of Illinois

White, Richard E. Associate Professor of Physiology and Biophysics B.S., 1981, Emory University; Ph.D., 1987, Medical College of Georgia


Wilcox, Norma Assistant Professor of Sociology B.A., 1973, University of Arkansas at Little Rock; M.A., 1976, Ph.D., 1983, St. Louis University


Williams, Richard E. Associate Professor of Finance; Associate Dean, College of Business and Administration B.S., 1964, Miami University; M.A., 1965, University of Florida; Ph.D., 1975, Michigan State University

Willis, Charles L. Professor Emeritus of Education B.S., 1954, M.S., 1957, Indiana State University; Ed.D., 1964, Indiana University

Wilson, Brenda A. Assistant Professor of Biochemistry and Molecular Biology B.A., 1981, Barnard College; M.S., 1988, Johns Hopkins University; Ph.D., 1989, Johns Hopkins University

Winkelman, Dorothy R. Associate Professor Emerita of Education B.S., 1964, Saint Joseph's College; M.S., 1969, Syracuse University; Ph.D., 1972, University of Kansas

Wise, Gordon L. Professor Emeritus of Marketing B.S., 1956; M.B.A., 1957, Miami University

Wolfe, John R. Adjunct Assistant Professor of Education, WSU-Lake Campus; Director of Learning Resource Center, WSU-Lake Campus

A.A., 1975, Donnelly College; B.S., 1976, Benedictine College; M.S., 1978, Kansas State University; Ph.D., 1995, Bowling Green State
### University Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>University/Institution</th>
<th>Degree(s)</th>
<th>Institution/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolfe, Paul J.</td>
<td>Professor of Physics and Geology</td>
<td>University of Michigan</td>
<td>B.S., 1960; M.S., 1963; Ph.D., 1966</td>
<td>Case Institute of Technology</td>
</tr>
<tr>
<td>Wolff, J. Mitch</td>
<td>Assistant Professor of Mechanical Engineering</td>
<td>Purdue University</td>
<td>B.S., 1983; M.S., 1989; Ph.D., 1995</td>
<td>Purdue University</td>
</tr>
<tr>
<td>Wood, David R.</td>
<td>Associate Professor Emeritus of Physics</td>
<td>University of Michigan</td>
<td>B.A., 1956; M.S., 1958; Ph.D., 1967</td>
<td>Purdue University</td>
</tr>
<tr>
<td>Wood, Timothy S.</td>
<td>Professor of Biological Sciences</td>
<td>University of Michigan</td>
<td>A.B., 1964; Earlham College; Ph.D., 1971</td>
<td>University of Colorado</td>
</tr>
<tr>
<td>Xu, Li D.</td>
<td>Professor of Management Information Systems</td>
<td>University of Michigan</td>
<td>B.S., 1978; M.S., 1981; Ph.D., 1992</td>
<td>Harvard Medical School</td>
</tr>
<tr>
<td>Xue, Kefu</td>
<td>Associate Professor of Electrical Engineering</td>
<td>Shangai Jiao University</td>
<td>B.S., 1977; M.S., 1980; Ph.D., 1987</td>
<td>The Pennsylvania State University</td>
</tr>
<tr>
<td>Yen, Vincent C.</td>
<td>Professor of Management Science</td>
<td>National Taiwan Normal University</td>
<td>B.Sc., 1966; M.A., 1969; Ph.D., 1975</td>
<td>The Ohio State University</td>
</tr>
<tr>
<td>Yi, Jung-Soo</td>
<td>Assistant Professor of Communication</td>
<td>Oregon State University</td>
<td>B.A., 1987; M.A.S., 1989; Ph.D., 1997</td>
<td>Pennsylvania State University</td>
</tr>
<tr>
<td>Young, Joseph A.</td>
<td>Associate Professor Emeritus of Education</td>
<td>University of Dayton</td>
<td>B.S., 1953; M.Ed., 1961; Ph.D., 1971</td>
<td>Miami University</td>
</tr>
<tr>
<td>Yuan, Tsing</td>
<td>Associate Professor of History</td>
<td>George Washington University</td>
<td>B.A., 1960; M.A., 1962; Ph.D., 1969</td>
<td>University of Pennsylvania</td>
</tr>
<tr>
<td>Zhang, Xudong</td>
<td>Assistant Professor of Biomedical and Human Factors Engineering</td>
<td>University of Michigan</td>
<td>B.S., 1990; M.S., 1994; Ph.D., 1997</td>
<td>University of Michigan</td>
</tr>
<tr>
<td>Zoller, Lillian</td>
<td>Clinical Instructor of Nursing</td>
<td>Long Island University</td>
<td>B.S.N., 1976; M.S., 1994; Ph.D., 1997</td>
<td>Azusa Pacific University</td>
</tr>
</tbody>
</table>

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### President of the Faculty

David L. Barr

### Past Faculty Presidents

Robert J. Sweeney 1998-99
James A. Sayer 1997-98
Rudy Fichtenbaum 1996-97
Donna M. Schlagheck 1995-96
James A. Sayer 1994-95
Marguerite G. MacDonald 1993-94
Edgar A. Rutter 1992-93
Gregory Bernhardt 1991-92
Rudy Fichtenbaum 1990-91
James E. Sayer 1989-90
Alphonso L. Smith 1988-89
Jeanne Ballantine 1987-88
Richard Williams 1986-87
Robert Dixon 1985-86
Elizabeth Harden 1984-85
James Jacob 1983-84
Charles Hartmann 1982-83
Donald Pabst 1981-82
Lilburn Hoehn 1980-81
James E. Sayer 1979-80
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 Kmetec 1968-71

### Presiding Officers of Faculty Meetings

Norman Anon 1967-68
Edward Cox 1966-67
Criteria for Ohio Residency

Ohio Board of Regents Rule 3333-1-10

Ohio student residency for state subsidy and tuition surcharge purposes

(A) Intent and Authority

(1) It is the intent of the Ohio Board of Regents in promulgating this rule to exclude from treatment as residents, as that term is applied here, those persons who are present in the state of Ohio primarily for the purpose of receiving the benefit of a state-supported education.

(2) This rule is adopted pursuant to Chapter 119 of the Revised Code, and under the authority conferred upon the Ohio Board of Regents by section 3333.31 of the Revised Code.

(B) Definitions

For purpose of this rule:

(1) A "resident of Ohio for all other legal purposes" shall mean any person who maintains a twelve-month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state welfare benefits, and who may be subjected to tax liability under section 5747.02 of the Revised Code, provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.

(2) "Financial support," as used in this rule, shall not include grants, scholarships, and awards from persons or entities that are not related to the recipient.

(3) An "institution of higher education," as used in this rule, shall mean any university, community college, technical institute or college, general and technical college, medical college, or private medical or dental college that receives a direct subsidy from the state of Ohio.

(4) For the purpose of determining residency for tuition surcharge purposes at Ohio's state-assisted colleges and universities, "domicile" is a person's permanent place of abode; there must exist a demonstrated intent to live permanently in Ohio, and a legal ability under federal and state law to reside permanently in the state. For the purpose of this policy, only one domicile may be maintained at a given time.

(5) For the purpose of determining residency for tuition surcharge purposes at Ohio's state-assisted colleges and universities, an individual's immigration status will not preclude an individual from obtaining resident status if that individual has the current legal status to remain permanently in the United States.

(C) Residency for Subsidy and Tuition Surcharge Purposes

The following persons shall be classified as residents of the state of Ohio for subsidy and tuition surcharge purposes:

(1) A dependent student, 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 such student in an institution of higher education.

(2) A person who has been a resident of Ohio for the purpose of this rule for at least twelve consecutive months immediately preceding his or her enrollment in an institution of higher education and who is not receiving, and has not directly or indirectly received in the preceding twelve consecutive months, financial support for persons or entities who are not residents of Ohio for all other legal purposes.

(3) A dependent child of a parent or legal guardian, or the spouse of a person who, as of the first day of a term of enrollment, has accepted full-time, self-sustaining employment and established domicile in the state of Ohio for reasons other than gaining the benefit of favorable tuition rates.

Documentation of full-time employment and domicile shall include both the following documents:

(a) A sworn statement from the employer or the employer's representative on the letterhead of the employer or the employer's representative certifying that the parent or spouse of the student is employed full time in Ohio.

(b) A copy of the lease under which the parent or spouse is the lessee and occupant of rented residential property in the state; a copy of the closing statement on residential real property located in Ohio of which the parent or spouse is the owner and occupant; or if the parent or spouse is not the lessee or owner of the residence in which he or she has established domicile, a letter from the owner of the residence certifying that the parent or spouse resides at that residence.

(D) Additional criteria that may be considered in determining residency for the purpose may include but are not limited to the following:

(1) Criteria evidencing residency:

(a) If a person is subject to tax liability under section 5747.02 of the Revised Code;

(b) If a person qualifies to vote in Ohio;

(c) If a person is eligible to receive state welfare benefits;

(d) If a person has an Ohio's driver's license and/or motor vehicle registration.

(2) Criteria evidencing lack of residency:

(a) If a person is a resident of or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of welfare benefits, or student loan benefits (if the student qualified for that loan program by being a resident of that state or nation);

(b) If a person is a resident or intends to be a resident of another state or nation for any purpose other than tax liability, voting, or receipt of welfare benefits (see paragraph (D)(2)(a) of this rule).

(E) Exceptions to the general rule of residency for subsidy and tuition surcharge purposes:

(1) A person who is living and is gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who is pursuing a part-time program of instruction in an institution of higher education shall be considered a resident 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 such person's domicile.

(3) 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.
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 and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person’s domicile as long as such person has fulfilled his or her tax liability to the state of Ohio for at least the tax year preceding enrollment.

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.

Procedures

A dependent person classified as a resident of Ohio for these purposes under the provisions of paragraph (C)(1) of this rule and who is enrolled in an institution of higher education when his or her parents or legal guardian removes their residency from the state of Ohio shall continue to be considered a resident during continuous full-time enrollment and until his or her completion of any one academic degree program.

In considering residency, removal of the student or 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 paragraph (C)(1) or (C)(2) of this rule.

For students who qualify for residency status under paragraph (C)(3) of this rule, residency status is lost if the employed person upon whom resident student status was based accepts employment and establishes domicile outside Ohio less than twelve months after accepting employment and establishing domicile in Ohio.

Any person once classified as a nonresident, upon the completion of twelve consecutive months of residency, must apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes if such person in fact wants to be reclassified as a resident. Should such 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, such person shall be reclassified as a resident.

Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student’s actual financial support.

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

Any institution of higher education charged with reporting student enrollment to the Ohio Board of Regents for state subsidy purposes and assessing the tuition surcharge shall provide individual students with a fair and adequate opportunity to present proof of his or her Ohio residency for purposes of this rule. Such an institution may require the submission of affidavits and other documentary evidence which it may deem necessary to a full and complete determination under this rule.

Guidelines for Interpretation and Application of Ohio Board of Regents’ Residency Rule 3333-1-10

1. Section (B)(1)

a. A “twelve-month place or places of residency in Ohio” within the meaning of this section, shall mean the maintenance of living quarters in the state. This may be fulfilled in whole or in part by the rental of a dormitory room. It should not be interpreted so as to require unbroken physical presence in the state, so long as the “place” of residence is maintained. Residency is not lost, therefore, by vacationing out of the state. However, should an individual leave for the entire summer to be employed out of state, the legitimacy of a claim that twelve-month residency in Ohio has been maintained should be seriously questioned.

b. A person who is “qualified as a resident to vote in Ohio and receive state welfare benefits” need only be physically present here for thirty days and have declared himself or herself to be a resident. This should not be interpreted so as to require anyone to actually register to vote or apply for welfare benefits.

c. Persons “who may be subjected to tax liability under section 5747.02 of the Revised Code” are defined in Revised Code 5747.01 (6) as follows:

“6 Resident means:

. Individual who is domiciled in this state;

. Individual who lives in and maintains a permanent place of abode in this state, and who does not maintain a permanent place of abode elsewhere unless such individual, in the aggregate, lives more than 365 days of the taxable year outside this state.”

The essential reason for this requirement is to ensure that persons who do enjoy residency benefits also have such income as they have subjected to Ohio taxation.

d. A person who has not “declared himself or herself to be or allowed himself or herself to remain a resident of another state for these and other purposes” shall mean one who does not retain an out-of-state driver’s license, automobile registration, or voting residence, or who does not receive such things as loans or scholarships from another state when residency in that state is a prerequisite therefore. This total disavowal of residency in another state must be for a full year’s time before Ohio residency can be granted under this rule.

2. Section (B)(2)

The purpose of this section is to insure that persons receiving direct and substantial parental or family support from out of state shall not be allowed Ohio residency. Occasional small gifts that are not a substantial part of a person’s maintenance should not disqualify that person from achieving residency. Similarly, the receipt of grants, loans, or scholarships from the federal government, corporations, foundations, or banks that are not simply conduits for family support, or from other states when this is not precluded by section (B)(1), should not disqualify a person.

3. Section (B)(5)

a. Certain immigration visas carry with them the current legal status, by virtue of federal treaties and agreements, to enable the holder to remain in the United States and establish resident status. A student who holds one of these visas can therefore be considered for resident status for tuition surcharge purposes in the same manner as any other student assuming that the requirements specified in section (B)(1) of this rule are met.
b. The determination of the twelve-month residency requirement for an alien admitted for permanent residence, if necessary, shall include any portion, up to twelve months, of the elapsed time between the date of application for adjustment of status to lawful permanent resident and the date of application for residency for these purposes. All other relevant requirements under section (C) of this rule must also be adhered to in making the residency determination.

c. To change his or her immigration status from temporary to permanent, an alien must file INS form I-845. The college or university residency official can obtain the date an application was accepted by INS through an information release form (G-641) signed by the alien. There is also a nominal service fee that must accompany the release form.

d. In instances where, prior to August 10, 1978, aliens, for reasons of quota, have not been permitted to officially file for permanent residency (INS form I-845), but have had their visa preference petition approved by INS, and have been allowed to remain and to work in the United States, the residency official may use the INS verified petition approval date to document intent to become a permanent resident. In these cases, the visa preference petition must be filed by the individual seeking Ohio residency, if adult, and not by another party. In the case of minors, the head of the family’s application for such minors is acceptable. All other relevant requirements under section (C) of this rule must be adhered to in making the residency determination.

4. Section (C)(1)
The intent of the term “dependent student” is to tie the residency of persons who have never emancipated themselves from their parents to those parents. This constitutes a continued, unbroken dependency. Children who emancipate themselves from parents who are Ohio residents and later return to dependency on those parents may be awarded immediate residency status by providing satisfactory documentation of renewed dependence and evidence of compliance with other pertinent provisions of the rule, including physical presence in the state.

“Enrollment” under this section shall commence with the first day of classes at the institution attended.

5. Section (C)(2)
The term “resident” in this section shall mean a person who meets the requirements of section (B)(1).

6. Section (C)(3)
The intent of this provision is to speed up the “residency clock” for family members (i.e., spouse, dependent children) whose domicile follows that of a full-time employed person who has moved into Ohio for employment purposes. Rather than being subject to out-of-state tuition rates for the first twelve months of the employed person’s presence in Ohio, the dependent children and spouse of the full-time employed person are eligible for resident tuition rates immediately—provided that the move to Ohio was not for the purpose of gaining favorable tuition rates, and that appropriate documentation is provided. In accordance with the provisions of section (F)(5) of the rule, residency officers may request such documentation in addition to the materials specifically described in (C)(3) as they deem necessary to conclusively determine employment status and/or domicile. Also, residency officers may request documentation of application and acceptance dates pertaining to employment and instructional programs as necessary to weigh questions of intent.

7. Section (E)(1)
a. “Gainfully employed,” as used in this section, shall mean engaged in an income-producing occupation. The spouse of the person gainfully employed may also be considered gainfully employed provided he or she is providing full-time services as a homemaker.

b. “Full-time” employment, as used in this section, shall be construed in light of the standards applicable to a given occupation.

c. A “part-time program of instruction” for these purposes is to be defined by an institution as that term is otherwise applied.

8. Section (E)(2)
a. The “United States military service,” as used in this section and in section (E)(3), shall mean persons holding status in the branches of military service, whether performing actual military duty or on assignment elsewhere.

b. “Dependents” under this section and under section (E)(3) shall be limited to members of the immediate family who are in fact dependent on the member of the military for a substantial part of their financial support.

c. Active service of commissioned officers of the Public Health Service shall be deemed to be active military service in the armed forces of the United States for determining residency for tuition purposes.

d. “Domicile,” under this section, shall mean the place a person declares to be his or her home for voting and taxation purposes.

9. Section (E)(4)
“Domicile,” under this section, is to be interpreted in the same manner as (E)(2).

10. Section (E)(5)
a. For purposes of this rule, a migrant is defined as someone who makes or has made his or her livelihood in hiring out to do seasonal work and has traveled interstate for this purpose.

b. The income earned in Ohio shall have been subjected to Ohio taxation.

c. In making a determination under this section, an institution may consider any probative evidence submitted by a person. Any evidence taken may be required to be sworn.

11. Sections (F)(1), (F)(2), and (F)(3)
a. A person’s parents or legal guardian shall be deemed to have removed their residency from Ohio when the person with whom a student resides and upon whom he or she is financially dependent leaves the state with no present intention of returning to resume residency.

b. An “academic degree program” shall not include the associate degree when the person receiving such degree continues full-time pursuit of a baccalaureate degree.

c. For students who qualify for residency status under (C)(1) or (C)(2), a period of twelve months following removal of the independent student or dependent student’s parents or legal guardian is permitted during which residency is not lost.
Notice to Students


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 College, 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.

**Equal Opportunity/Affirmative Action Policy**

Wright State University is committed to achieving full equal opportunity in all aspects of university life. We are proud of the diversity of the university community and strive to make all members of the community feel welcome.

The policy of Wright State University is to not discriminate against any persons on the basis of race, religion, color, sex, sexual orientation, 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 which prohibit discrimination.

Any questions or comments about the university’s policy, and any complaint about perceived discrimination, may be directed to the director of Affirmative Action Programs, 224 Millett Hall, (937) 775-3207.

The university’s Affirmative Action Plan is maintained in the Office of Affirmative Action Programs. Wright State is a public institution, and accessible to any member of the public.

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 the director of Disability Services, 133 Student Services, (937) 775-2141.

**University Aim Statement**

*Adopted by the Board of Trustees December 3, 1996.*

Wright State University will be a catalyst for educational excellence in the Miami Valley.

**Mission Statement**

*Adopted by the Board of Trustees December 3, 1996.*

Wright State University will be a catalyst for educational excellence in the Miami Valley, meeting the need for an educated citizenry dedicated to lifelong learning and service. To those ends, as a metropolitan university, Wright State will provide: access to scholarship and learning; economic and technological development; leadership in health, education and human services; cultural enhancement; and international understanding while fostering collegial involvement and responsibility for continuous improvement of education and research.
University Ethics Statement

Adopted by the WSU Board of Trustees March 28, 1997.

Wright State University’s goal of excellence and its dedication to innovation in teaching, research, and service rests upon an individual and collective commitment to ethics. The purpose of this statement is to provide general guidelines for strengthening the integrity of the university. It sets forth basic principles for enabling the university to accomplish its mission and serves the public interest in an ethical way.

This statement also identifies a basic process for integrating these principles into the institution’s culture. The university expects the administration, the faculty, the staff, and the students to exemplify these principles in their words and actions.

To guide the conduct of the university community, Wright State University endorses the following principles:

Honesty

Members of the university community will be guided in all their activities by a high regard for truth.

Respect

Members of the university community will show concern for the individuality of others and their ideas.

Justice

Members of the university community will treat others fairly.

Accountability

Members of the university community will be responsible stewards of the public trust.

To integrate these principles into the institution’s culture and to encourage ethical conduct, Wright State University is committed to an ongoing process which will involve the creation of a standing advisory and resource committee to support ongoing formal ethics education, and to assist the university in developing ethics policies and procedures.

Diversity Statement

Wright State University celebrates diversity. Our daily life is made rich by the diversity of individuals, groups, and cultures. The interplay of the diverse stimulates creativity and achievement in all facets of our existence.

Respect, tolerance, and goodwill are the keystones to enjoying the diversity of our world. We are all linked to each other in a world created for all of us to share and enjoy. Each member of humanity has a potential contribution to make to the whole. It is our duty to encourage and promote that contribution.

Wright State University is committed to achieving an intellectual, cultural, and social environment on campus in which all are free to make their contribution. We will achieve an environment in which every student may think, and learn, and grow without prejudice, without intimidation, and without discrimination. We will achieve an environment in which personal dignity and respect for the individual are recognized by all.

Wright State University promotes the acceptance and appreciation of every individual regardless of race, gender, age, ethnicity, ability or disability, sexual orientation, socioeconomic status, religious affiliation, or national origin. We encourage appropriate activities and events that foster learning about the diversity of our world.

Wright State University will be a model for our geographic region, exemplifying that a human community can exist that celebrates diversity, enjoys the richness that diversity brings to our lives, and grows stronger with every new member.

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 Department 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 AACSB—The International Association for Management Education, 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 Environmental Health and Protection Accreditation Council, medical technology by the Committee on Allied Health Education Accreditation and Accreditation and the National Accrediting Agency for Clinical Laboratory Scientists, medicine by the Liaison Committee on Medical Education, the College of Engineering and Computer Science’s biomedical engineering, computer engineering, electrical engineering, engineering physics, human
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Factors engineering, materials science and engineering, and mechanical engineering programs by the Accreditation Board for Engineering and Technology, Inc., the bachelor of science program in computer science by the Computing Sciences Accreditation Board, Inc., and the College of Nursing and Health by the National League for Nursing and the Ohio Board of Nursing. In addition, the Bachelor of Science program in chemistry is certified by the American Chemical Society, and the Wright State University Lake Campus is accredited by the North Central Association of Colleges and Schools at the associate degree-granting level. Professional Accreditation Agencies (1) Council for Accreditation of Counseling and Related Educational Programs, (2) Council on Rehabilitation Education, Inc.

Wright State holds membership in numerous organizations, including the American Association of Colleges for Teacher Education, American Council of Learned Societies and National Association of State Universities and Land Grant Colleges, 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, the Council of Baccalaureate and Higher Degree Programs of the National League for Nursing, the American Association of Engineering Societies, the American Society for Engineering Education, and the National Society of Professional Engineers.

Wright State participates in many kinds of cooperative ventures with local colleges, universities, and institutions. The College of Engineering and Computer Science participates in the Dayton Area Graduate Studies Institute (DAGSI), a unique partnership between the University of Dayton, a private institution; Wright State University, a state-supported institution; and the Air Force Institute of Technology (AFIT), a federal institution. The primary long-term goal of DAGSI is to become a world-class graduate and post-graduate research institute. 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. Various academic centers serve both the university and the metropolitan community by providing training for students and services to the community. The Center for Labor-Management Cooperation provides outreach and in-plant support of economic development goals, retaining and expanding jobs in Ohio, and improving quality, safety, and productivity of unionized organizations. The Center for Ground Water Management provides education, research, and service activities to address problems associated with protecting ground water resources. The Women’s Center provides resources and support to women from the campus community and the surrounding area. The Center for Healthy Communities is a community-academic partnership that includes WSU’s Schools of Medicine and Professional Psychology, the College of Nursing and Health, and the Department of Social Work; Sinclair Community College; and the Dayton community. Its mission is to improve the health of the community, educate its health professionals, and serve as a force for change. The Center for Urban and Public Affairs links the Ohio Board of Regents’ Urban University Program and WSU to the Dayton area, fostering strong applied research and public service. The Statistical Consulting Center provides help free of charge to faculty, staff, and graduate students with the collection, analysis, interpretation, and management of research data and to the community-at-large for a fee. The Center for Teaching and Learning supports WSU’s commitment to excellence in teaching by assisting teaching staff in teaching effectiveness and student learning. The Institute for Environmental Quality recognizes the importance of student environmental awareness at all levels, overseeing the environmental courses, programs, and research that serve our diverse student interests. 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, United Theological Seminary, and the University of Dayton.
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